Protecting the Force?

A Historical Perspective on the Operational Effect of the Division Protection Cell

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Abstract

PROTECTING THE FORCE? *A Historical Perspective on the Operational Effect Of The Division Protection Cell* by MAJ Robert D. Gordon, U.S. Army, 63 pages.

Because the protection cell is such a recent creation and is still being developed in many corps and divisions, there is little literature regarding the operational effects of these operational planning units. The resultant lack of understanding of the key operational changes that have occurred in the organization of the staff hinders effective operational planning and mission command. The uncertainty and complexity of today's operating environment demands a closer look at the effectiveness of operational staffs. Providing a more complete discussion of the doctrinal and operational changes in the realm of protection over the last forty years requires a broad body of research spanning several disciplines. Because of the myriad complex tasks compiled under the protection cell, the research is limited to three primary areas of survivability, CBRN operations, and operational area security. These areas will highlight the greater issues encompassed by protection cell, however, addressing the question of what the operational effect of the division protection cell has been.

Through a better understanding of the functions of the protection cell, divisions will be better able to conduct operations with effective, integrative protection efforts. Cynics and opponents of the current division staff structure may balk at its size and dismiss it as ineffective compared to earlier, smaller staffs. They mistake the organization's robust numbers as bloated, and excessive when compared with requirements that the staff should be able to handle. The high number of soldiers who have been tasked to supplement deployed divisions over the last ten years portrays a different perspective. On the contrary, today's operational environment requires a vast number of distinct but supportive and interdependent specialists working in concert toward operational objectives. The division protection cell is a perfect example of just such an organization. Through the lenses of survivability, CBRN operations, and area security, the operational effect of the division protection cell has been an increased efficiency with regard to the flow of information, training, and planning integration across seemingly disparate specialties; inefficient internal staff organization and a lack of professional development programs for protection officers, however, prevent the division protection cell from reaching its full operational potential.

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INTRODUCTION

The reports came as a shock. At 0315 hours on January 31, 1968, less than one day after an approved cease-fire, two regiments from the People's Army of North Vietnam, supported by two battalions from the Viet Cong, assaulted and, within hours, captured most of the culturally significant city of Hue. Although there had been a great deal of enemy movement in the area in the previous two months, allied intelligence believed that there was little likelihood of a Communist attack.[1] The US 1st Cavalry Division Headquarters, responsible for the region, was in a flurry of action, attempting to at once determine what the enemy was doing, and what the proper response was to those actions. The chief of staff, Colonel George Putnam, was overwhelmed with partial information and a host of tasks he needed to accomplish simultaneously so he could help the division commander plan for the attack. He needed an updated enemy situation template from his intelligence officer. His operations officer owed him a possible scheme of maneuver. The division logistics officer needed to update him on what supplies were available and what, if any, the attacking force had captured or destroyed. The division engineer had to develop a mobility plan to get the division's forces to Hue as quickly as possible. He needed his chemical officer and Air Force liaison officers needed to coordinate for the use of napalm attacks to pry the communist defenders from their positions. Finally, he needed his staff to produce a plan to protect his own headquarters and the brigades while they prepared for future operations and began moving to forward assembly areas. Most of all, he needed time that he did not have.[2]

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[1] Erik Villard, *The 1968 Tet Offensive Battles of Quang Tri City and Hue*, p. 28 and LTG John J. Tolson, *Vietnam Studies: Airmobility*, pp 154-155.

[2] This vignette recounts the events in the opening hours of the Battle of Hue, during the Tet Offensive in Vietnam. During that battle, North Vietnamese forces fought to control the Citadel in the ancient Vietnamese capital city of Hue, near the border between North and South Vietnam. After more than 24 hours of attempting to gain enough situational awareness to develop a plan, elements from the 1st Cavalry Division aided United States Marines in retaking the city in a tactical victory. (Jack Schulimson, et al., *U.S. Marines in Vietnam: 1968, the Defining Year*, p. 177).

Since the First World War, the United States Army has organized itself for combat in divisions. These organizations have a standard organization, called the Table of Organization and Equipment, or TO&E, but inevitably each commander and chief of staff will modify what they have based on their unit's particular environment and mission, resulting in a Modified Table of Organization and Equipment, or MTO&E.

Primarily because of the demands imposed upon it by protracted conflicts in Iraq and Afghanistan, the Army reorganized its divisions again. This time, the overarching design concept was modularity, which was a more brigade-centric approach, wherein brigades with various unique capabilities could be organized under a robust division staff that could, in theory, train and deploy to fight together. This shift led to significant changes in the division staff as well. The staff, which began as a relatively small group in the Vietnam era, expanded over time to encompass the hundreds of personnel in today's division headquarters.

The division organizational concept used in Vietnam is referred to as Reorganization Objectives, Army Division, or ROAD Division. This structure, which evolved in the mid 1950s from lessons learned in World War II and Korea, "emphasized the concept of interchanging battalion-size combat maneuver units within and between divisions in the interest of easy task organization."[3] In response to a myriad of experiences, environmental changes, and surfacing theories, the structure evolved into what is commonly known as the Airland Battle Division of the 1980s.[4] This division organization placed more emphasis on the self-sustainment of divisions with a more robust capability to conduct major combat operations in preparation for major combat operations in Europe against the Soviets. Today's modular divisions, on the other hand, retain an even greater amount of staff planning capability, but focused on the self-sustainment

[3] Richard Kedzior, "Evolution and Endurance: The U.S. Army Division in the Twentieth Century," p. 29.

[4] Ingo Trauschweizer, *The Cold War U.S. Army: Building Deterrence for Limited War*, p. 230.

of brigade combat teams. Because of this, most of the execution capability was divvied up among the brigades, with the planning capability remaining in the division staff.

As the division staff grew, it became more and more evident that streamlining and compartmentalization would be necessary in its organization. Still, the true effectiveness of any organization is not how clear their line-and-block structure chart is, but how well they react to unexpected and chaotic circumstances, as described above. In order to determine how effective today's divisions are, it is useful to compare them to older configurations and see what works better and what does not. In this vein, one area of particular interest is the newest of these structural compartments: *protection*.

The Army defines protection as "preservation of the effectiveness of mission-related military and nonmilitary personnel, equipment, facilities, information, and infrastructure deployed or located within or outside the boundaries of a given operational area."[5] In 2007, protection became one of six warfighting functions, which replaced the former battlefield operating systems.[6] Since that time, most divisions and corps have integrated protection cells into their staffs. These cross-functional groups combine the seemingly disparate efforts previously covered by separate special staff officers in the past, including air and missile defense, personnel recovery, information protection, fratricide avoidance, operational area security, antiterrorism, survivability, force health protection, chemical, biological, radiological, and nuclear (CBRN) operations, safety, operations security, and explosive ordnance disposal.

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[5] U.S. Army, *FM 3-37, Protection*, p. 1-1. This manual, managed a the U.S. Army Maneuver Support Center of Excellence at Fort Leonard Wood, is the first manual that has dealt directly with the concept of protection, although many of its conceptual roots can be seen in the older concepts of the division rear command post and other older manuals on division operations. Overall, the manual reads much like the 1982 version of *FM 100-5*, in that it has several initial concepts that need to be improved upon over time by capturing best practices into later doctrinal updates.

[6] Combined Arms Doctrine Directorate, "Army Doctrine Update #1," 24 February 2007, p. 3. The battlefield operating systems were scrapped in favor of warfighting functions in order to better align Army doctrine with Joint doctrine. Under current doctrine, the six warfighting functions – Command and Control, Movement and Maneuver, Intelligence, Fires, Sustainment, Protection – combined with Leadership, form the elements of combat power.

During recent exercises by the Mission Command Training Program (MCTP) at Fort Leavenworth, KS, many participants have vocalized their concerns with attempting to organize the staff along warfighting functional lines, and the protection cell seems to create the most consternation.[7] There is good reason for this. In some cases, the protection cell is being improperly organized and utilized by division staffs. The intent of the protection function is to integrate the efforts of several specialty sections. However, to organize the staff by locking away the division engineer, provost marshal, chemical, air defense, surgeon, and other special staff officers who have a hand in protection in a room together, only to be called upon when a "protection issue" comes up, would be a mistake. Fortunately, while some divisions initially attempted to do just this in order to be in accordance with their understanding of doctrine, their actual operations over time indicate a more integrative approach. A more common and effective practice used by more mature division staffs, is to have a representative from each specialty section located within the protection cell, while other members are involved with plans, operations, and other areas within the operations center. Discussing and codifying these practices can alleviate much of the concern springing from the protection cell organization.

Because the protection cell is such a recent creation and is still being developed in many corps and divisions, there is little literature regarding the operational effects of these operational planning units. The resultant lack of understanding of the key operational changes that have occurred in the organization of the staff hinders effective operational planning and mission command. The uncertainty and complexity of today's operating environment demands a closer look at the effectiveness of operational staffs. Providing a more complete discussion of the doctrinal and operational changes in the realm of protection over the last forty years requires a broad body of research spanning several disciplines. Because of the

[7] LTC Keith Matiskella, MCTP Interview, 22 SEP 2011. In interviews with observer-controllers from the Mission Command Training Center, it was reported that the 25th Infantry Division and 35th Infantry Division (National Guard) had several concerns with the construct of their protection cells. One of the more significant concerns was how to determine who should be in charge of their protection cells, based on skills, experience, and personality issues.

myriad complex tasks compiled under the protection cell, the research is limited to three primary areas of survivability, CBRN operations, and operational area security. These areas will highlight the greater issues encompassed by protection cell, however, addressing the question of what the operational effect of the division protection cell has been.

Through a better understanding of the functions of the protection cell, divisions will be better able to conduct operations with effective, integrative protection efforts. Cynics and opponents of the current division staff structure may balk at its size and dismiss it as ineffective compared to earlier, smaller staffs. They mistake the organization's robust numbers as bloated, and excessive when compared with requirements that the staff should be able to handle. The high number of soldiers who have been tasked to supplement deployed divisions over the last ten years portrays a different perspective.[8] On the contrary, today's operational environment requires a vast number of distinct but supportive and interdependent specialists working in concert toward operational objectives. The division protection cell is a perfect example of just such an organization. Through the lenses of survivability, CBRN operations, and area security, the operational effect of the division protection cell has been an increased efficiency with regard to the flow of information, training, and planning integration across seemingly disparate specialties; inefficient internal staff organization and a lack of professional development programs for protection officers, however, prevent the division protection cell from reaching its full operational potential.

[8] The Worldwide Individual Augmentation System (WIAS), run by U.S. Army G-3 Operations and sourced by Human Resources Command, has provided hundreds of officers each year since its inception in 2002 in order to fill shortfalls on division, corps, and joint and coalition staffs in Iraq and Afghanistan. *TRADOC Regulation 500-2*, "Taskings and Individual Augmentation Management."

1. SURVIVABILITY

Having received the warning order to move north to support the Marines under attack at Hue, the 1st Cavalry Division Chief of Staff recognized one of his key tasks would be to find a way to maintain logistical lines of support to I Corps, many of whose roads had been cut off by the North Vietnamese. He turned to his division engineer to inquire as to the feasibility of the division's internal engineer assets to support route clearance operations to assure the mobility of logistics packages while still supporting the movement of the division's operations and improving the survivability of the headquarters. He received the expected response: we need more engineer support. The division engineer ordered his assistant to analyze the situation and determine what requirements to request, and then returned to his primary duty as the commander of the division's engineer battalion. As he initiated movement of his troops, he continuously reported back to his assistant in the division operations center in order to increase the assistant's situational awareness. Meanwhile, the assistant furiously planned for improved survivability of protective positions around the headquarters and worked with the newly attached 35th Engineer Battalion on a mobility plan in support of I Corps's logistical needs.[9]

While the roles and responsibilities of the division engineer have evolved since Vietnam, the balance of mobility, countermobility, survivability and geospatial intelligence expertise has been constant. Of these, the primary engineer function that falls under the control of the division protection cell is survivability, defined as "all aspects of protecting personnel, weapons, and supplies while simultaneously deceiving the enemy."[10] Divisional units possess internal combat engineering capability, as well as chemical, air defense, and other assets in order to increase their survivability during operations, but they

[9] Traas, *Engineers at War: The United States Army in Vietnam*, pp 345-346. This vignette highlights the command structure of engineer command and planning within maneuver divisions during the Vietnam era. In today's divisions, there are currently no pure engineer battalions within the division, and the division engineer is a former battalion commander, rather than a single officer who is dual-hatted as both the division engineer and engineer battalion commander.

[10] U.S. Army, *FM 1-02, Operational Terms and Graphics* (2004), p. 1-180.

must routinely request additional capabilities for general construction engineering and other low-density assets to improve their survivability posture. The division engineer generally leads the planning and facilitating for those operations within the protection cell. While the division engineer is a key member of the protection cell, survivability is only one of his many responsibilities. His oversight of geospatial and combat engineering operations requires that he be constantly integration into both the intelligence and movement and maneuver cells as well. Still, it is the role of the division engineer, as the subject-matter expert, that matters most to the discussion of protection. The operational effect of the protection cell on survivability has been to increase efficiency through decentralized flow of information, training and planning integration, and overall engineer command and control capability within the division. Although this decentralization has hindered professional development of engineers within the division in some ways, some minor organizational and doctrinal changes can aid in overcoming these disadvantages.

1.1 STAFF ORGANIZATION AND FUNCTIONS

1.1.1 *Background and Historical Development*

Since its inception in 1776, the U.S. Army has dictated the use of certain rules and practices, based on theory and experience, as guidelines for tactics and organization. After World War I, the Army began to refer to these approved tenets as doctrine.[11] Throughout most of its history, doctrine has dictated that tactical-level staffs, including divisions and brigades, will possess special staff sections, in addition to the typical G- or S-administrative staff positions.[12] By the time of the development of the ROAD divisions, the division engineer was a well-established and important special member of the staff who advised other staff sections on all engineer matters. Unique in some respects, the division engineer served concurrently as the commander of the division's internal engineer battalion and the senior staff engineer, until the most recent reorganization of the divisions in 2003. This combination meant that the division

[11] Walter Kretchik, *U.S. Army Doctrine: From the Revolutionary War to the War on Terror*, p. 5.

[12] Michael Matheny, *Carrying the War to the Enemy*, p. 47.

engineer had the distinctive ability to advise his division commander as a staff officer, but with the additional clout of a commander – a very different relationship than that of a mere staff officer. When the Army took on a more modular design for its divisions, the engineer battalion and its commander were removed and replaced by a special troops battalion in each brigade combat team, with a branch non-specific commander. The division engineer then became an engineer lieutenant colonel with prior battalion command experience. With the Army Chief of Staff's recent approval of the substitution of special troops battalions with brigade engineer battalions, brining four engineer battalions into each division, many of these organizational and management issues can be alleviated.[13]

During the Vietnam era, divisional engineer units conducted missions across the entire spectrum of engineer operations. While these internal battalions had fairly robust capabilities, coordination was necessary for additional missions such as road construction, bridging, port construction, well drilling, and many others.[14] Since there were nearly thirty separate engineer battalions and more than sixty separate engineer companies in Vietnam, it became necessary to establish control of these separate units, first under the 18th Engineer Brigade, and then under the U.S. Army Engineer Command (ENCOM), Vietnam (Provisional) in December 1966, commanded by MG Robert Ploger. With troop levels rising from 389,000 to 486,000 by the end of 1968, each division engineer had to thoroughly integrate and coordinate with Ploger's command in order to ensure their division had the sufficient engineer support to continue operations.[15]

By the late 1980's, the Airland Battle operating concept had been fully integrated throughout the Army's divisions, with the notion of protection identified as one of the four key elements of combat

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[13] U.S. Army Engineer School. According to the Engineer School's reports on the Total Army Analysis for FY 2014-2018, brigade combat team engineer battalions will begin appearing in formations by FY14, which will more than double the number of engineers in the division and greatly expand engineer planning, command and control, and operational capabilities.

[14] Gordon Rottman, *The U.S. Army in the Vietnam War 1965-73*, p. 43.

[15] Adrian Traas, *Engineers at War*, p. 105.

power. Engineers represented an essential part of the protection concept by "developing fortifications and shelters which enable units not only to survive, but also to fight in positions that would otherwise be untenable due to enemy fires."[16] This priority of effort during mobile defensive operations reflected the Army's desire for maneuver-focused warfare and emphasis on countering the Soviet deep battle threat. Because Airland Battle was focused at the division level, it made sense that the division engineer – now either the engineer battalion or brigade commander, depending on whether the division was heavy or light – was not only commanding his soldiers but also coordinating the defensive plans through the staff; without proper planning and coordination, there existed the risk that fighting positions and fields of fire between units would not be properly integrated and that protective obstacles would not have proper overwatch. The 12th Engineer Battalion, which was attached to the 3rd Armor Division, made great use of this practice during DESERT STORM.[17] With the drawdown of military forces in the 1990s and the modularization of divisions in the early 2000s, the role of the division engineer would change significantly in the decentralized operational environments of Iraq and Afghanistan.

The creation of the special troops battalions and its proposed replacement, the brigade engineer battalion, responded to maneuver commanders' desire to have exclusive internal engineers at their disposal to conduct offensive, defensive, and stability operations at the brigade level. While the initial engineer company within each brigade combat team was nowhere near robust enough to fully support its brigade, it enabled the brigade commander to plan and execute several decentralized engineer operations without coordinating through higher headquarters. This decentralization of operations means that the division engineer, who is typically a former engineer battalion commander, has little control over the

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[16] U.S. Army, *FM 5-100* (1988), p. 6.

[17] Rasmus and Wilcox, "Historical Report of the 12th Engineer Battalion in support of Operation DESERT SHIELD/Storm," p. 11. During their short time in Kuwait, the 12th Engineer Battalion conducted explosive ordnance disposal, constructed roads, base camps, and survivability positions, as well as breaching operations in support of 3rd Armored Division's operations.

engineer forces within the division.[18] While this type of relationship can benefit the brigades in the current operating environment, there are many instances when the protection requirements exceed those of present within the brigade. The question remains of how effective this organization will be if and when divisions are called upon to fight as divisions again.

1.1.2 *Staff Organization and Flow of Information*

The flow of information within a division headquarters is critical to the operational effectiveness of the organization. Managing the flow of critical information falls under the purview of the senior staff officer within each specialty. While these lines of responsibility were far more clearly drawn under the ROAD and Airland Battle divisions, the new channels of communication in the form of working groups and cells in the modular divisions have changed the nature of responsiveness and engineer effort integration. Although adjustments are required within the protection cell in order to improve some issues, the current staff organization is quite effective in dealing with the current operating environment.

The separation between engineer commander and staff officer that has occurred in recent years has resulted in a greater need for coordination, communication, and integration. In Vietnam ROAD organization, the division engineer was the engineer battalion commander assigned under the division. This relationship had many advantages to both the engineer lieutenant colonel and his commanding general, as there were few, if any lines of bureaucracy between the two.[19] The engineer's broad spectrum of responsibility between staff and command requirements, however, still required him to delegate many of his staff-related duties to assistants within his team on the division staff. The primary planner for survivability missions was the assistant division engineer for base development. This was a particularly important position in Vietnam due to the number and scope of construction projects going on

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[18] According to representatives at U.S. Army Human Resources Command, nearly all current division engineers are former commanders of either engineer or special troops battalions.

[19] LTG(Ret.) Glynn C. Mallory interview. LTG Mallory, a former division commander, explains that, for staff actions and issues, everything was vetted through his division chief of staff. As a commander, however, his engineer battalion commander had direct access to the commanding general for any pertinent command issues.

simultaneously. The assistant engineer would coordinate all engineer actions that the division's engineer battalion was responsible for, as well as those that required assistance from separate engineer battalions and companies under the ENCOM.[20] This assistant and the rest of the division engineer cell relieved the battalion commander many of the stresses and responsibilities of staff work so that he could then focus on the management, command, and control of his soldiers and units. Still, when the division commander required immediate action or decisions, the division engineer, as a commander, enjoyed a far more responsive relationship with the division commander than did many other special staff members who were not commanders. The significance of this unique relationship, though arguably parochial, has had far-reaching effects as the role of the division engineer has developed.

Under the Airland Battle construct, this relationship became even more solidified, with more detailed doctrinal and practical guidance outlining the responsibilities of the ADE. In the 2nd Armored Division in 1988, the commanding general would have his engineer battalion commander attend all division-level training meetings and all quarterly training briefs conducted by each maneuver brigade. This practice ensured that internal engineer assets could support all combined arms training, and if not, that the division engineer knew which corps assets to request for support.[21] By this time, the Airland Battle Division concept had been codified and implemented throughout the Army, to include doctrinal guidance on the use of the ADE to assist the division engineer.[22] For the first time in U.S. Army engineer doctrine, there is a specific delineation of duties between the division engineer and ADE, representing a

[20] Traas, pp 62-63.

[21] LTG(Ret.) Mallory interview.

[22] U.S. Army, *FM 5-100, Engineer Combat Operations* (1988), p. 32. "The ADE provides advanced warning through engineer channels of future division operations to the divisional and supporting corps engineer battalions and to the maneuver brigades. He also receives reports from them to keep the division staff and the corps engineer informed on current engineer operations within the division."

major change from the previous 1984 version of *FM 5-100*.[23] With the developments toward Airland Battle and the movement toward an even broader scope of responsibilities for the divisional engineer battalion commander, the doctrine shows a clear recognition that the staff responsibilities are too much for a commander to handle alone.

The restructuring of both Army divisions and the Engineer Regiment permanently severed the relationship of the division engineer to an engineer battalion – a connection that had already been stretched for more than a decade. Since the current construct assigns a former engineer battalion commander as the division engineer, the division staff maintains the breadth of experience that the division engineer had under previous structures. In addition, each of the brigade combat teams within the division has an engineer major who works as the brigade engineer planner. This brings the relationship that had previously existed at the division level down to the brigade level, reflecting the desire for decentralized planning and operations. In the early years of modularity, the inadequate number of engineers within the brigade has limited internal operations to mobility and other combat-related missions, but the new brigade engineer battalion brings more capability to the formations.

Under this organization, the division engineer and brigade engineer both acted solely as planners, having to rely upon outside engineer support to conduct and effectively control nearly all protection efforts that took place in Iraq and Afghanistan. The new structure, however, will place mission command and control of all engineer operations, to include survivability and construction efforts, under the purview of the division. This is because the brigade engineer battalion contains nearly three times the number of engineer soldiers as the old special troops battalion did, and adds a robust vertical and horizontal construction capability well beyond that of the old structure.[24] With this increased capability, rather than

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[23] U.S. Army, *FM 5-100, Engineer Combat Operations* (1984), p. 48. Of the many duties outlined doctrinally for the division engineer, the assistant division engineer would, in practice, perform many of them.

[24] U.S. Army Engineer School, Fort Leonard Wood, MO. The severe shortage of actual engineers assigned within the division has been well documented in after actions reviews from brigade combat

being limited to the role of planner, the division engineer can effectively command and control synchronized engineer operations within the division area of responsibility without constantly competing for and relying on outside engineer resources.

1.1.3 *Training and Planning Integration*

Within the ROAD structure, centralized planning and coordination, with decentralized execution, facilitated combined arms planning, as well as development of tactics, techniques, and procedures, within the division. Once all the separate engineer battalions and companies were organized under the ENCOM, standard operating procedures quickly became codified and standardized. The Construction Directorate, Military Assistance Command – Vietnam (MACV), as the coordination office between MACV and the ENCOM, created standards for construction across all engineer units – divisional and separate – so that different units would create similar base construction and survivability results, regardless of unit designation or command relationship.[25] The division engineer and his assistant then published and enforced all standards throughout the division, ensuring compliance with the established procedures. The concept of base development as a survivability requirement had doctrinal implications as well, leading a 1970 Joint Logistics Review Board to recommend placing an engineer on all joint field staffs with the specific responsibility of managing base construction and survivability efforts.[26] This organization followed the example of army divisions on the ground, such as the 1st Cavalry Division, which had

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teams. Initially, heavy brigades had two engineer companies, each assigned to maneuver battalions, while light brigades has only one engineer company assigned under the brigade special troops battalion. In both cases, engineer companies were focused on combat engineering missions, both because of the nature of their command structure under maneuver commanders and because they simply did not contain the capability to conduct any kind of large scale construction or survivability functions. The numbers and structure of the brigade engineer battalion are taken from several approval presentations created by the U.S. Army Engineer School and the Total Army Analysis for FY 2014-2018. Under this structure, each BCT will have one combat engineer company with four platoons, and a general engineering company with vertical and horizontal construction platoons, greatly increasing the engineer capability of the brigades.

[25] Carroll Dunn, *Base Development in South Vietnam, 1965-1970*, p. 19.

[26] Dunn, pp. 118-119.

already created the assistant engineer position to handle such issues within the brigade as early as September 1966.[27]

The alignment of divisions under specific corps headquarters during the 1980s and early 1990s married the supporting engineer battalions under their higher engineer brigade headquarters quite nicely. For the most part co-located with their supporting maneuver units, engineers enjoyed a uniquely accommodating environment to build combined arms teams and to plan and execute training and operations.[28] One of the most effective such rehearsals was conducted by VII Corps prior to their assault into Kuwait in January and February 1991. Working on a full-scale model of the kind of defenses they expected to encounter, commanders and planners integrated their various engineer assets, both internal and attached, in order to determine the optimal breaching technique that would assure mobility while protecting the force.[29] Such integrated planning and training had a definitive impact on the success of ground forces in DESERT SHIELD.

By removing the engineer battalions from the divisions in the early 2000s, divisions and brigades were robbed of this means of effectively planning and training for operations with the engineer units who would support them in theater. In collective training environments, both at home station and during rotations at the combat training centers, brigades could train only with their limited internal engineer assets in most cases, having to assume external engineer support would take care of tasks outside their internal capabilities. In addition to this, even when supporting engineer units and other combat

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[27] Traas, p. 62.

[28] U.S. Army, *AR 350-50*, Combat Training Center Program, 2003, p. 11. One of the best additions to effective collective training was the combat training centers, charged with providing "a realistic, stressful combat training environment for combined arms and joint training which approximates actual combat." Using the newly revamped combat training centers as capstone exercises, the division engineer was able to focus all of his battalion's efforts toward supporting the maneuver units in the division, with equal attention given to mobility, countermobility, and survivability efforts. Often, outside engineer battalions specializing in construction or combat engineering would augment maneuver forces in order to more fully integrate and plan for their utilization during combat operations. While coordination issues would always occur during the fog of combat, divisions focused on combined arms training and planning to mitigate such occurrences.

[29] Stephen Bourque, *Jayhawk! The VII Corps in the Persian Gulf War*, pp 110-111.

multipliers were known prior to deployment, lining up collective training between maneuver forces and their enablers was often impossible. Often, alternate engineer units would support training exercises to meet their individual requirements, never to be seen by the training maneuver force in theater. This kind of disjointed planning and training led to a lack of engineer unity of effort in theater, as well as unnecessary frustration and tension between engineers within brigade combat teams and those from external engineer battalions.[30] The brigade engineer battalion structure should aid in returning a more robust, standardized, and unified engineer effort to the division. Through this relationship, the division engineer will be able to have more of an effect on the integration of survivability and other protection-related training, and the traditional, habitual relationship between engineer units and their supported maneuver forces will produce a more operationally effective means of protecting those forces.

1.1.4 *Professional Development*

While many leaders today lament the lack of opportunity for professional development due to structural problems, each era has seen its own challenges in this area. There were several hindrances to the professional education of engineer officers in Vietnam. The broad reason for this issue was that, because of the decision not to activate the U.S. Army Reserves in support of the war, engineer efforts had to be conducted by active duty engineers.[31] Because the most skilled plumbers, electricians, and carpenters in the Engineer Corps actually come from the Reserves, where they are better able to practice

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[30] As a route clearance company commander under the 2nd Brigade Combat Team, 2nd Infantry Division under Multi-National Division-Baghdad (MND-B) in 2007, the author had absolutely no contact with the MND-B Engineer for any coordinating effort, either through the 2nd Brigade Engineer or through the 2nd Special Troops Battalion Commander. More alarmingly, the planning of the few missions the company conducted involving protection was conducted almost entirely at the battalion and company level, with little more than a task and purpose provided from brigade. These projects usually involved the hardening of civil structures to support joint security stations and combat outposts as part of the "Surge" plan for Baghdad. While ultimately successful, these missions were marked by varied timelines, non-standardized construction specifications, and a general lack of coordination between the BCT engineer companies and the higher echelon's general support engineer units. The new structure clearly lacked the unity of effort and standardized survivability specifications that had existed under the ENCOM structures that were present in both Vietnam and DESERT STORM.

[31] Graham A. Cosmas, *MACV: The Joint Command in the Years of Escalation 1962-1967*, p. 244.

their skills in civilian life and then use them for military purposes when needed, the Army was at a huge handicap in terms of professionally trained and practiced engineer soldiers. While regular army engineers were certainly well trained for combat engineering and minimal countermobility missions, the rigors of base camp construction and survivability projects were beyond most of their scope of expertise. In addition to the issue of enlisted experience, few active duty engineer officers were actually trained and practiced civil engineers or construction project managers, so their base of expertise had to be expanded, as well. To combat this issue, the U.S. Army Engineer School at Fort Belvoir reinstated an engineer-specific officer candidate school, and expanded its construction training for enlisted soldiers.[32] In the short term, however, on-the-job training was necessary at the division level. Forced to conduct fast-paced, intricate operations that most soldiers had no experience with, from concrete mixing to carpentry to steel welding, the division engineer polled his troops to see who had any kind of experience, and then would set up training and chain-teach classes so that every soldier and junior leader expeditiously learned their required skills.[33] While this did not solve the problems associated with twelve-month rotations and soldier turnover, the creation of such a professional development program, combined with increased rigor at the Engineer School, certainly increased the overall professionalism and expertise of active duty engineers throughout the Army.

The Airland Battle Army of the 1980s had fewer of the problems that faced the ROAD Army, mainly because of the transition to an all-volunteer force and a time of relatively stable peace in which to rebuild and restructure. Because there was less of a reliance on draftees, the Army was able to build and maintain a professional officer and NCO corps as never before, resulting in the development of truly professional engineers at all levels, particularly in the realm of construction and survivability engineering. As the senior engineer within the division, the engineer battalion commander was responsible for the proper development of all of his officers and NCOs. The division engineer would work this with his

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[32] Robert Ploger, *U.S. Army Engineers, 1965-1970*, p. 183.

[33] Ploger, 184-185.

assistant to ensure that all engineers within the division were trained and seeking out the correct developmental assets to enhance within their profession – both as engineers and as army officers.[34] This was an area that would be hindered by the restructuring of the divisions in 2003.

A dearth of professional development exists in the current divisional structure for engineers, especially with regard to their role in the protection warfighting function, which will hopefully be assuaged by the creation of the brigade engineer battalion and other possible developments. With engineer companies falling under battalions with branch non-specific commanders, it was incredibly difficult to develop engineers beyond the company grade level. To help address this problem, the Engineer School conceptualized the development of a "maneuver support" officer: an officer with expertise not only within his assigned branch, but also in the management of several other specialties, such as CBRN, military police, and air defense.[35] While this concept may have been effective, its results will likely never be realized due to the development of the brigade engineer battalion. Although the battalion commander will still be responsible for the military intelligence and signal companies for the brigade combat team, his relationship will remain more of a supervisory role than a truly developmental one because of a lack of expertise within those vastly different branches, and so a professional development deficiency will still exist for those company commanders. Still, the creation of the brigade engineer battalion will greatly enhance the ability of the division engineer to ensure the professional development of all engineers in the division, which has been greatly lacking for nearly ten years.

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[34] Mallory interview. LTG Mallory explains that he treated professional development as commander's business, and therefore the division engineer was ideally suited for the overall development of his subordinate leaders. In the new structure, this may present some issues because the division engineer, though he will normally outrank the battalion commanders, will not have command authority over them.

[35] McCoy, William H. MG (Ret.), Interview, 23 September 2011. The main idea of this concept was that officers who were assigned to maneuver enhancement brigades – the essentially Army's operational level maneuver support unit – eventually would be ideally suited to command units like the special troops battalions because of the breadth of experience they had gained from working in the MEB.

1.2 PROTECTION ASPECTS OF SURVIVABILITY

Having established the basic evolution of the division engineer staff organization and functions, it is still necessary to assess the effectiveness of each of the staff to provide survivability to protect the force. The three most significant areas within the realm of protection that enable this kind of assessment are: (1) Mobility, (2) Situational Understanding, and (3) Hardening.[36] Through these lenses, it is clear that the effective use of the protection cell and the brigade engineer battalion mark an attempt to restore effectiveness lost in the early years of modularity.

1.2.1 *Mobility*

While the tactical implementation of protective mobility has changed over time, today's Army with the addition of the Protection Cell does not match protective measures with the mission set as effectively as previous organizations have. *Field Manual 3-37* describes the mobility aspect of protection by stating that the "survivability of friendly forces is much more likely when they are moving or when they possess the ability to reposition quickly," adding that "[s]tatic units must maintain the capability to move on short notice."[37] In the Vietnam era, this type of survivability was achieved through the use of small, quickly constructed and relatively easily defensible mobile base camps. The provision of lightweight engineer construction equipment capable of being airlifted via helicopter greatly increased the ability of engineers to conduct such operations, especially when located within the habitually supporting engineer battalion, such as the 8th Engineer Battalion in 1st Cavalry Division.[38] The effective integration of bridging units was key to the mobile success of the Cambodia operations later in the war as well, as engineers constantly assured the freedom of maneuver for forces.[39] During DESERT STORM, while there were few permanent base camps built during combat operations, engineers again were effectively

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[36] U.S. Army, *FM 3-37, Protection*, 2-12.

[37] U.S. Army, *FM 3-37, Protection*, 2-12.

[38] Traas, 62.

[39] Traas, 496, Ploger 176.

integrated through the division engineer and the habitually assigned engineer battalions in order to assure mobility with breaching efforts, as mobility was a key tenant of the maneuver-focused Airland Battle concept. In today's modular Army, without habitually supporting construction engineers, assured mobility is much more difficult for the division engineer to provide and coordinate for. While the brigade engineer battalion will help address many of these issues at the brigade level, the division engineer, as the senior divisional mobility planner, will have to overcome some mission command issues. Specifically, since each maneuver brigade commander will have an engineer battalion commander working for him, the division engineer will have engineer assets, but no command authority as to their implementation. Whereas the division engineer of the ROAD and Airland Battle divisions was the commander of troops, the current division engineer is simply a staff officer. This type of organization has worked well in the recent counterinsurgency fights in Iraq and Afghanistan, but does little for coordinated effort in situations where a division level fight is required.

1.2.2 *Situational Understanding*

Situational understanding is another area that has been hindered by the separation of the division engineer and the habitual engineer commander.[40] In the Vietnam era, the army saw the erosion of the rear area due to the circumstances in fighting in a counterinsurgency environment. Because of this, there was a need for survivability everywhere, and therefore an inherent need for robust situational understanding for protection specialists. As the engineer battalion commander, the division engineer was able to gain situational understanding through both his broad understanding of the division commander's intent, as well as his comprehensive experience from commanding on the ground.[41] With the resurgence of maneuver warfare in the 1980s, the Airland Battle Division was able to utilize rear operations again, but

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[40] U.S. Army, *FM 3-37, Protection*, p. 2-12. Situational understanding is obtained through "applying analysis and judgment to relevant information to determine the relationship among the mission variables to facilitate decision-making. It requires the ability to identify, process, and comprehend the critical elements of information about what occurs inside a commander's AO. Having accurate situational understanding provides the baseline for hazard assessments."

[41] Traas, 579-580.

the requirement for situational understanding was no less prevalent. While the ADE gained more responsibility in the staff realm, the key to maintaining situational understanding for survivability was the commander's ground perspective.[42] This level of situational understanding was lost in modularity, much to the detriment of mission success. Indeed, with the enhanced focus on protection and the reduced level of ability and influence of the division level engineers, there developed a "doctrinal disconnect between mission accomplishment and force protection."[43] Nowhere is this disconnect more evident than in the rapid development of the Mine-Resistant, Ambush Protected (MRAP) vehicle to protect U.S. service members from improvised explosive devices. Due in part to the tactical and organizational failings of division and brigade level engineers to effectively implement protection measures into tactics, techniques and procedures, thousands of soldiers have been killed or wounded, and billions of dollars have been spent in a seemingly protective vehicle whose "incorporation into current brigade combat team structures is as infeasible as it is impractical."[44] While there certainly were materiel issues that significantly compounded the protection issues that IEDs created, a solely materiel solution without regard for the organizational, doctrinal, and training shortfalls is an incomplete one.[45] Had brigades and divisions not been stripped of their internal engineer assets and robust planning cells, leaving a disconnect between operational level protection planners and their ground command counterparts, much of the crisis of casualties and treasure could have been diminished, and protection could have been better assured.

1.2.3 *Hardening*

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[42] U.S. Army, *FM 5-100, Engineer Combat Operations*, 1988, p. 32.

[43] Andrew Krepinevich and Dakota Wood, "Of IEDs and MRAPs: Force Protection In Complex Irregular Operations" and Gibson, "Hell-Bent on Force Protection: Confusing Troop Welfare With Mission Accomplishment in Counterinsurgency," p. 11.

[44] Ryan Kranc, "MRAP Future Discussion Paper," *Small Wars Journal*, February 2011, 1.

[45] The Joint IED Defeat Organization (JIEDDO) has recognized this fact and, now that the problem of poorly armored vehicles has been somewhat alleviated, the organization focuses more on non-materiel solutions to overcoming the IED threat by attacking the network and training the force. As the JIEDDO Director states on their website, "The best IED detective is a well-trained marine or soldier." https://www.jieddo.dod.mil/train.aspx, accessed 18 December 2011.

This discussion on the MRAP also applies to the concept of hardening, and it is nothing new to the concepts of protection and survivability engineering in combat. Hardening works in unison with camouflage, concealment and deception. However, since the latter are achieved through both engineering and CBRN efforts, they will be discussed more at length in the next section. "Hardening measures protect resources from blast, direct and indirect fire, heat, radiation, or electronic warfare."[46] In Vietnam, rocket and mortar fire killed more than 5,000 soldiers were killed, and wounded many more.[47] Many of these casualties could have been prevented had the soldiers been in sufficiently hardened positions, but many more were saved because of proper planning and implementation of protection measures, coordinated through the division engineer. Under Airland Battle doctrine, the division engineer was responsible for fortification, protective obstacles, strong points, camouflage, and deception construction operations.[48] Through his ADE, he was able to plan operations while executing, leading and assessing those missions as the commander. In recent years, with the trend from army engineer-constructed base camps to huge forward operating bases – colloquially, "Super FOBs" – the responsibility for the protection of soldiers has shifted from army engineers to contractors.[49] While most contractors are required to place protection assets where commanders direct them, confusion arises at times due to contractors not being fully integrated into the base defense plans. At smaller-level combat outposts and joint security stations, the division engineer has direct say and influence on the location and implementation of hardening assets. Even in those cases, the responsibility of emplacing those assets falls down to the brigade or even engineer company level. This decentralization of hardening operations, paired with the rising reliance on contracted survivability, adds to the question of how the Army would effectively protect itself if it were to again fight as divisions.

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[46] U.S. Army, *FM 3-37*, 2-12.

[47] United States Archives website.

[48] U.S. Army, *FM 5-100, Engineer Combat Operations*, 1988, pp. 58-9.

[49] Leonard Wong, "CU @ The FOB: How the Forward Operating Base is Changing the Life of Combat Soldiers," p. 1.

1.3 ASSESSMENT

The evolution of the survivability over the last forty years has been a result of changes to both the operating environment and nature of friendly and enemy forces. The rugged Vietnam terrain, combined with the guerrilla type of warfare of the Viet Cong and the widespread use of helicopter mobility all created a need for mobile survivability efforts, capable of providing sufficient hardening and protection, to be available at all times. While the division engineer staff was far from robust, the ability of the division engineer to leverage his expertise as commander with the staff work of his assistant assured efficient flow of information, effective planning and integration, and excellent situational understanding. The most significant disadvantage to the ROAD organization was the lack of time for professional development and technical training prior to deployment. The changes to the role of the division engineer in the Airland Battle Division with regard to protection would address this issue head-on.

The operating environment of the 1980s placed far more emphasis on the need for professional soldiers to conduct complex maneuver operations against a technologically and doctrinally commensurate Soviet enemy. A greater focus on professional engineers and noncommissioned officers led to a more technically adept and tactically proficient force leading up to Operation DESERT STORM. The increased requirements placed on the division engineer battalions required a great deal more mission command from the division engineer, placing greater responsibility for staff work on the ADE. Under this staff organization, flow of information, planning integration and professional development within the division reached a peak. While the organization was by no means perfect, it certainly met the protection needs of the Army, as exemplified in the success of operations in the Middle East. When military operations commenced in Iraq twelve years later, an entirely different Army in transition showed up.

With the requirement to fight in a decentralized manner against an insurgent enemy, the Army needed to reorganize quickly into a more agile and flexible force. The Army's operating concept changed from a division-level fight to a brigade-centric one. Understandably, the brigade staff became more robust in order to better address the constantly changing tactical concerns, while the division and corps staffs became geographically-oriented operational planning cells. While the division engineer had little

control over the engineers within his own division and no command authority over them, his influence as a manager of external engineer assets in support of survivability operations became vital. In short, engineers were expected to do more tactically and operationally, both within the engineer realm and as a member of a warfighting function that was neither well defined nor fully understood by doctrine writers or practitioners. Though efforts had been made at the U.S. Army Maneuver Support Center of Excellence to create officers who were maneuver support specialists in engineer, chemical, and MP functions, there has been little discussion for how to develop protection specialists.[50] Both the protection cell and the warfighting function remain an amalgam of specialties with no officer truly qualified to make decisions regarding their proper implementation. This lack of a plan to develop expertise in the realm of protection undermines the warfighting function's utility and hinders its standardization throughout the Army.

In order to address this issue, the Maneuver Support Center of Excellence must develop a program, similar to the one developed at Fort Belvoir for engineer officers during the Vietnam era, in order to properly train a defined group of officers on all of the aspects of protection. This may even mean a transformation from the Maneuver Support Center of Excellence to the Protection Center of Excellence, since no such center exists at this time.[51] A general introduction to the concepts would fit most aptly in the captains career course, with a more robust course occurring either at the end of intermediate level education for select officers. The target population for this specialty would of course be engineers, as well as chemical, intelligence, and some maneuver officers, and the training should take place at Fort Leonard Wood, as the proponent for Protection. While funding for additional professional military education will become tighter and tighter in the coming years of reduced military funding, the potential

[50] McCoy interview.

[51] At the time of this writing, centers of excellence exist for all Army warfighting functions except protection. While such a discussion goes beyond the scope of this paper, it may make sense, in the future, to align centers of excellence with the joint warfighting functions, which would mean giving up the concept of maneuver support. An alternative, defended by many who have come through the maneuver support world of the last fifteen years, including MG McCoy, would be to have different warfighting functions than the joint world, as they do not necessarily align well with most Army operations.

payoff is tremendous. Until we develop a plan to better address the shortcomings of the development of a specialist in all the areas covered under protection, the effectiveness of its ability to provide survivability and other aspects of protection will be greatly reduced.

2. CHEMICAL, BIOLOGICAL, RADIOLOGICAL AND NUCLEAR PROTECTION

Bien Hoa Air Base, Republic of Vietnam, January 11, 1962. A U.S. Army specialist drives a military truck with a large vat of herbicide up to the back of a U.S. Air Force C-123, where he meets an airman awaiting delivery of his cargo. The airman's mission: drop the herbicide onto target areas in order to defoliate possible egress routes of enemy troops. Twenty-nine years later, another young U.S. soldier sits in an equally foreign, though far more arid country. He sits in a chemical protective suit, mask at his side, atop his Fox M93 Nuclear Biological Chemical Reconnaissance System in Saudi Arabia, awaiting his orders. Given the threat environment and nature of the enemy, his mission is clear: "detect, identify, mark, sample, and report chemical and radiological contamination on the battlefield."[52] Twelve years later, after another quick ground war, a third young soldier has finally made it to Baghdad. He drives a lightly armored HMMWV, unaware of what the acronym "IED" means, much less that one could cut through his vehicle and sever his leg at any moment. His mission: locate, identify, and report weapons of mass destruction allegedly developed for use by Saddam Hussein.

Through these glimpses, it is almost impossible to believe that each of these soldiers held the same military occupational specialty of "chemical specialist." Over the last forty years, perhaps no branch of the Army has changed their focus and expertise more than the Chemical Corps. From offensive, mobility-focused operations in Vietnam, to the defensive posture of DESERT STORM, to the counter-proliferation mission of IRAQI FREEDOM, the Chemical Corps has reinvented itself again and again to respond to both the nature of the enemy and the strategic context of its times. In modern terms, the Division CBRN officer has one of the most potentially significant, if under-utilized missions within the cell. The importance of effective CBRN operations has been somewhat minimized over time.

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[52] "Fox M93A1 Nuclear, Biological, and Chemical Reconnaissance System (NBCRS)," Global Security. http://www.globalsecurity.org/military/systems/ground/m93a1.htm, accessed on 17 November 2011.

Despite this fact, and in part because of it, the CBRN officer at the division level is perhaps best suited to become the chief coordinator and specialist for protection efforts within the division.

2.1 STAFF ORGANIZATION AND FUNCTIONS

2.1.1 *Background and Historical Development*

Chemical operators and units are among the lowest density specialties in the Army. Because of this, their assets are typically coordinated at higher levels and then planned and distributed to tactical units as needed. This was certainly the case in Vietnam. Most ROAD-structure divisions had only a division chemical officer and a small chemical detachment, normally used as "tunnel rats," in conjunction with combat engineers. Not for the first time in U.S. military history, engineers and chemical soldiers shared a habitual and mutually supporting role in combat (maneuver) support operations.[53] Above the tactical level, however, it was the Chemical Corps' role in the operationally offensive use of chemical and biological weapons in Vietnam that almost saw the end of their existence altogether.

The U.S. military used chemical and biological weapons in Vietnam for three major reasons: (1) Defoliation of farmland in Communist-held areas, through the use of biological weapons like Agent Orange, (2) Rapid burning of jungle areas through the use of napalm, and (3) riot control agents such as CS gas.[54] The use of these weapons for tactical gains had major strategic implications at home. Reports of Americans using chemical and biological weapons that harmed both the health and livelihood of noncombatants in what was already a contentious war proved convincing in changing the overall stance of the United States toward the use of such weapons. The result of this was President Nixon's 1969 renouncement of the use of all biological weapons, and his assurance not to be the first to use chemical

[53] Bernard W. Rogers, "Cedar Falls – Junction City: A Turning Point," p. 61.

[54] Seymour M. Hersh, *Chemical and Biological Warfare: America's Secret Arsenal*, pp. 144, 155, and 167.

weapons in any war.[55] At the Army level, this meant a fight for relevance, and even the mere existence of the Chemical Corps.

The conflicts of the 1970s found an appropriate and significant direction on which the Chemical Corps could focus: namely, *protection* against such weapons in combat. Over the course of a decade, while the Army was going through its own transformation, the Chemical Corps converted from an offensive to a protective force, focused on keeping the U.S. Army combat effective in the event of a chemical or biological attack in war.[56] This focus proved well founded and predictive as the Army prepared for its 1991 invasion of Iraq.

While the effectiveness of Iraqi Scud missiles was far less than Saddam Hussein would have preferred, the presence and intent of chemical and biological weapons from a leader who had used them both in combat and against his own people required a strong chemical defense and response plan. Fortunately, the changes that the Chemical Corps had undergone were implemented and integrated into divisions in the 1980s. As it turned out, the Iraqis did not conduct any successful chemical attacks against Allied Forces in 1991, but the threat was readily apparent to planners. A 1990 report from the Washington Institute for Near East Policy claimed that Iraq was becoming "increasingly independent of foreign sources of assistance for their chemical and biological weapons."[57] Maneuver and support planners had to be prepared for the likelihood of a swift and effective chemical attack, the loss of which could have grave tactical and strategic impacts.

Regardless of Saddam's reason for not utilizing his chemical arsenal against the Allies in 1991 and again in 2003, he still has the dubious honor of being the last head of state to utilize chemical weapons in a major interstate conflict, during the Iran-Iraq War. Because of this, combined with the

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[55] William A. Buckingham, Jr., *Operation Ranch Hand: The Air Forces and Herbicides in Southeast Asia, 1961-1971*, p. 161.

[56] Albert J. Mauroni, *America's Struggle with Chemical-Biological Warfare,* pp. 75-6.

[57] W. Seth Carus, "The Genie Unleashed: Iraq's Chemical and Biological Weapons Program," p. 37.

various treaties and accords barring states against the use of chemical and biological weapons, many have called again for the reduction of the role of the Chemical Corps. Indeed, in a time of constraining budgets, it is tempting to look at this branch as one whose expertise is least needed, based on the current operating environment. Terrorism, the defining international threat of the past decade, turned that idea on its head when al Qaeda announced its testing and intent of using chemical weapons, even going so far as to display videos of their chlorine gas testing on dogs.[58] Even as the U.S. Army turns its focus toward a more conventional threat, terrorism looms as an ever-present danger, and a failure to prepare and defend against such a threat could be catastrophic.

Over the last forty years, the Chemical Corps has continued to train on its competencies and perfect its procedures, all the while having to justify its own existence. While the likelihood of a chemical attack against troops in a conventional combat situation is somewhat low, the effects of such an attack are so catastrophic that the importance of this corps cannot be understated. However, the introduction of the division protection cell provides a new and exciting opportunity for further development of the division chemical officer to become a more relevant and contributive member of the planning staff.

2.1.2 *Staff Organization and Flow of Information*

Along with the vast historical changes in the mission of the Chemical Corps since Vietnam have come major variations in the organization of the chemical soldiers in the division and placement within the division staff. Under the ROAD structure, the Division chemical officer was responsible for coordinating many operations that were actually planned above division-level, and therefore served more of a deconflicting role within the staff. Due to the lack of a major chemical or biological threat, planners were engaged mostly in offensively oriented and enabling missions, as described above. In truth, due to the strategic nature of the Vietnam-era mission, few senior level chemical officers had served any time at

[58] Nic Robertson, "Disturbing scenes of death show capability with chemical gas," Cable News Network, http://archives.cnn.com/2002/US/08/19/terror.tape.chemical/ 2002.

all at the tactical level, the majority of officers spending more time in labs and proving grounds than with maneuver units.[59] All of that would change with the reorientation of the Chemical Corps' mission.

By the Army restructured its divisions under the Army of Excellence organization, a robust defensive chemical and biological capability could be found within nearly all divisions. After avoiding disestablishment in 1975 in the aftermath of Vietnam and the end of testing and development of chemical weapons for offensive use, the Chemical Corps redefined itself as the Army's foremost protective asset.[60] As such, each division had assigned to it a chemical company, capable of providing smoke and obscuration protection, as well as detection and decontamination capability. This created a structural problem though, because each division commander had to determine where best to place this vital company for command and control. Some commanders placed his chemical company under the aviation battalion, while others placed theirs under the control of the engineer battalions.[61] The obvious problem was the bureaucracy of the division chemical officer having to go through a non-CBRN commander in order to coordinate CBRN-specific tasks. Any tasking would have to go through the division chief of staff to the battalion and down to the company. While this seems to be a roundabout way to command and control, in practice, when the chemical company was required, it became a division asset that was directed by the commander and operations officer and coordinated by the division chemical officer.[62]

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[59] Mauroni, *America's Struggle*, p. 60.

[60] Mauroni, *America's Struggle*, pp 29-36 and 64. In 1968, the Chemical Corps became involved in a huge scandal when the Air Force tested the effects of VX gas in Utah. Thousands of sheep were killed or sickened due to effects from the gas, most of which were 30 miles away from the test site. The event caused such an outrage in political circles that it was a deciding factor in Nixon's changes to both policies in Vietnam and toward chemical and biological weapons in general.

[61] LTC(Ret.) Mallory interview. LTG Mallory placed his chemical company under this aviation battalion, as had been the common practice for the 2nd Armored Division at the time. He recognized the weakness of this structure, but overcame it through staff coordination and strength of subordinate commanders.

[62] According to LTC Mallory, this was particularly important in "Reforger" exercises, when the use of chemical, biological and nuclear attacks was planned for and response of the chemical assets was a critical evaluation factor.

Still, there was a better way to organize low-density enablers, and an attempt to address that would come through the modular division structure.

In the late 1990s, the concept of maneuver support was gaining traction through a number of sources, not the least of which was the base realignment plan that brought together engineers, military police and the chemical corps onto one installation at Fort Leonard Wood. The partnership, while initially burdensome, made its way into the field by the early 2000s.[63] Prior to modularity, the 1st Armored Division reorganized its operations center, placing together the engineer cell, provost marshal, air defense cell, and chemical cell in what the Chief of Staff referred to as the maneuver support cell, which was headed by the division engineer. Although named differently, this cell was strikingly similar to the modular protection cell that would be created in the modified divisions a few years later. The biggest change under the modular organization was increased fusion among functional areas that, while not always related, often required close coordination toward the end state of assured mobility.[64] The structure also aided in the streamlining of tasks and reduction in duplication of efforts. In the past, the division chemical officer, along with the engineer, provost marshal, air defense officer, and others had to report all issues and coordinate all efforts through the operations officer or the chief of staff. Now, the protection cell chief acted as the sole voice for all protection issues. While ostensibly this seems to be a good way of combining efforts, in reality it is not so simple.

The main problem with flow of information for chemical actions within this structure stems from its advantageous streamlining; with one officer in charge of combining the efforts of so many specialty tasks, how does a commander select the right officer as the protection generalist chief? The problems of training and professional development follow, but the problem of personnel selection cannot be

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[63] The common joke in the early 2000s was that you could still see the "claw marks" along Interstate 22 outside Fort McClellan, AL, where the MP and Chemical Corps had dug their fingernails in while being dragged to the middle of Missouri to be co-located with the Engineer School in 1999 to form the U.S. Army Maneuver Support Center. Thirteen years later, engineer, military police, and chemical officers are on somewhat equal ground, with a MP general now commanding the center.

[64] MG (Ret.)McCoy interview.

overemphasized. The current practice is usually to assign an engineer as the protection chief. This makes sense in some environments, but the situation becomes complicated when the threat of a chemical attack increases. The commander and chief of staff, out of necessity, are generalists. The protection cell chief adds another level of generality to the flow of information within the division. This is fine for training and low-threat environments, but in crisis actions, more flexibility and direct access is required from specialty officers, like the chemical officer. This bureaucracy is somewhat alleviated by the matrix structure of the modular division staff, but only if it is understood by all members. As broad as the division staffs have become, compartmentalization is necessary and beneficial, but only if it can be overcome in times of crisis to provide a decisive, swift response. This means we must train as we fight, and understand the ways to overcome the necessary evils of our bureaucracy.

2.1.3 *Training and Planning Integration*

The first thing – and often the only thing – that comes to mind when most soldiers think of chemical training is their annual trip to the gas chamber to test their protective masks. As the 2nd Armored Division Chemical Officer prior to DESERT STORM explained, the his primary role was "refresher training" and ensuring that the division had "serviceable masks, protective clothing, and NBC supplies on hand and issued to the troops."[65] Individual CBRN training is one of the easier concepts to grasp and accomplish in army training, but becomes far more problematic with regard to collective training due to organizational, materiel, and simple scheduling issues. This has been the case since the reorientation of the chemical mission in the 1970s, and it has not improved much under modularity.

Organizationally, the chemical response capability of army divisions represents decades of irrelevance in major combat operations. The fortunate happenstance of a lack of chemical attacks against our forces has correlated to a lack of emphasis on the importance of the chemical corps on recent battlefields. In terms of risk mitigation though, the result of a chemical attack, however slight the

[65] Colonel Mike Ahern, personal letter, 1995.

likelihood may be, would be so catastrophic that a response capability must be maintained, and training time must be allocated for it. The problems with collective chemical protective training under the Army of Excellence construct was that the high cost – both in terms of budget and combat effectiveness – was imbalanced with little measurable benefit in a training environment.[66] Although collective decontamination was easier to train on collectively than protection, but it was time-intensive, and few division commanders were interested in devoting time and resources that could otherwise be used for combat training. The issues did not improve under modularity, especially due to the general apathetic attitude toward modernization of chemical systems.

Prior to the invasions of Afghanistan and Iraq, the budget for procurement of improved chemical protective equipment was less than one-fifth of one percent of the Army's total acquisition funds.[67] Essentially, the Army went to war in 2001 with the same protective equipment that it had ten years earlier, when studies had shown that the equipment used at that time had been lacking.[68] This, of course, is due in part to the fact that chemical and biological weapons have not been used against American forces on a large scale. In fact, the only portion of the chemical acquisition budget that significantly increased after the invasion of Iraq was for the procurement of robotic devices for detection.[69] Indeed, it is not uncommon in the current operating environment to have the chemical section at the brigade level

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[66] Mauroni, *America's Struggle*, pp 177-180. Mauroni explains that, while it was easy to improve the speed of soldiers donning their personal protective gear through the use of tear gas, there was little benefit to actually use the vehicle protective functions, as it was easier and safer to use the vehicle without them, it was easier to engage the enemy, and if you turned off the protective equipment, you could save valuable fuel and battery time. Live-fire exercises conducted by the National Training Center confirm that use of chemical protective systems can cause inaccurate first shots, which can mean the difference between life and death in some cases.

[67] Mauroni, *Chemical-Biological Defense*, p. 173.

[68] Joseph Douglass and Neil Livingstone. *America the Vulnerable: The Threat of Chemical and Biological Warfare*, pp 178-179. This study, conducted in 1987, determined that the United States was vastly unprepared in terms of materiel to respond to an effective chemical attack, either from the Soviet Union, or one of the other developers of chemical-biological weapons, such as Iraq.

[69] Stanley Lillie, interview with Julius Evans, "Brigadier General Stanley Lillie on the Chemical Corps School," in *Chem-Bio Defense Quarterly*, p. 14.

focused entirely on security and other secondary missions, and to neglect almost completely their chemical responsibilities. This is partially because of their mission, but also due to time.

In today's environment, there are fifteen tasks, seventy-six subtasks and four battle drills that every soldier must be proficient on.[70] In addition, when preparing for a deployment, there is a rigorous list of theater-specific training that must be conducted. Combine that with field exercises, training center deployments, block leave and professional military education, and the training calendar fills up quickly. About the only manner in which chemical assets are habitually integrated into training is through concealment operations supported by the smoke platoon. Because the division chemical officer's efforts to integrate chemical training into the combined arms training calendar, the Army's assume a great deal of risk in this area.

2.1.4 *Professional Development*

With the small amount of emphasis placed upon chemical protection in practice over the past decade, it is small wonder that one of the blocks of instruction at the Chemical Officer Basic Course is how to conduct a unit status report; in reality, that is one of the major additional duties that normally falls into the unit chemical officer's lap.[71] Still, due to the proliferation of chemical and biological weapons and the persistent threat that they pose, there is a need to maintain the capability to protect against those measures.

Despite its perceived irrelevance, the chemical corps continues to develop its officers to detect chemical threats, protect soldiers from them, and decontaminate them in the event of an attack. In addition to these critical capabilities, the chemical corps also coordinates with other federal agencies in the areas of weapons of mass destruction and civil attack response. Because of the entirely flexible nature of the chemical corps' mission, its flexible and interagency approach to problem solving, and the

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[70] Lisa Alley, "TRADOC releases new Warrior Tasks and Battle Drills," p. 1.

[71] Blaine Hedges and Chuck Gutowski, "Chemical Officer Training: A Change for the Better." The authors discuss changes to the professional development of chemical officers, explaining that the time spent training on the Unit Status Report actually increased after Operation Iraqi Freedom began.

requirement to maintain a technically proficient corps, the chemical corps might be ideally suited to assume the role as proponent for all the warfighting function of protection, and to take over the role as chief of the unit protection cells. The development of this officer would be similar to the efforts to make a "maneuver support officer," as opposed to simply an engineer, chemical or military police officer, which was actually a concept inspired by the general logistics officers present in today's formations.[72] Rather than attending just the chemical captains career course, the officer could attend a hybrid course that would teach him how to manage and lead the various portions of the protection cell. While this would not address the command issues inherent to the protection cell, it would develop, over time, a solution to the problem of technical expertise.

2.2 PROTECTION ASPECTS OF CBRN

2.2.1 *Support to Combating Weapons of Mass Destruction*

At the end of the first Gulf War, the United States Army confidently arose from the ashes tactically victorious over a lesser opponent. Strategic failure arose, however, from the United States' failure to set conditions for either the next war or the ensuing peace, particularly with regard to Iraq's weapons of mass destruction.[73] Developed as a response to this failure, the line of effort to combat weapons of mass destruction is part of an integrated, interagency strategy that changes from "passive defense to tactical execution or support of the eight military mission areas to combat weapons of mass destruction."[74]

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[72] MG McCoy interview.

[73] Everett Dolman, *Pure Strategy*, p. 11. Dolman explains that strategy is often simply a plan for continuing or gaining political advantage, and that the loser more often determines results of a war more often than the victor. By observing the actions that Saddam took in the decade after the first Gulf War with regard to chemical and biological weapons, this argument clearly holds up.

[74] U.S. Army, *FM 3-37*, p. 2-16. The eight areas that the Chemical Corps supports are (1) Providing WMD security cooperation and partner activities, (2) Providing WMD threat reduction cooperation support, (3) Conducting interdiction operations, (4) Conducting WMD offensive operations, (5) Conducting WMD elimination operations, (6) Conducting CBRN active defense, (7) Conducting CBRN passive defense, and (8) Conducting CBRN consequence management operations. These missions

While the posture and attitude toward the strategy for combating weapons of mass destruction have changed in the past twenty years, the missions for the chemical assets within the division remain contingency-oriented and are seldom trained. Because of this, the division chemical officer must maintain and constantly remain abreast of enemy chemical capabilities and be able to implement contingency responses whenever necessary. Again, in such a situation, the chemical officer would need a direct line to the chief of staff and the commander, and the bureaucracy of the protection cell would fade away in the interest of timely instruction and guidance.

2.2.2 *Mission-Oriented Protective Posture Analysis*

Perhaps one of the most tactically important aspects of protection is also the one most often taken for granted in current operations. Became the Mission-Oriented Protective Posture (MOPP) has not been a chief planning consideration in major combat operations in nearly a decade, it is often overlooked as a given that the impact of chemical and biological weapons will be negligible. Had the proper precautions not been taken in Iraq in 1991 and again in 2003, and the enemy had taken a more dangerous course of action involving chemical or biological warfare, the results could have been catastrophic for the allied forces. It is not difficult to imagine a scenario in which improperly prepared soldiers from the 82nd Airborne Division, as the first combat division on the ground in Saudi Arabia in 1991, could have been nearly wiped out upon arrival without proper chemical response and defensive measures.[75]

In today's divisions, the chemical officer, in coordination with medical personnel, analyzes the mission variables (Mission, Enemy, Troops and Time Available, Terrain and Weather, and Civil Considerations, or METT-TC) in order to determine the appropriate MOPP level, ranging from "MOPP Ready," which requires soldiers to carry their mask and have the remainder of their gear accessible, to "MOPP 4," which requires soldiers to don their masks, protective suit, boots and gloves because a CBRN

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can involve any portion of the division, but are far less likely and therefore are seldom trained at the tactical level outside the chemical corps.

[75] Mauroni, *America's Struggle*, pp 5-6.

attack is imminent.[76] This practice, well codified and trained since 1982, when chemical detachments were brought back into division- and brigade-level organizations, has become ingrained in training and exercises, almost to a point of complacency. Still, because the nation has adopted a non-offensive stance on the use of chemical and biological weapons, the presence of such weapons in the hands of enemy forces requires a strong defensive and responsive posture.

In preparation for DESERT STORM, most division chemical officers were focused on preparing the soldiers of their divisions for a likely chemical attack.[77] It was generally assumed among Army intelligence reports that Saddam's most likely course of action would be to use chemical weapons, especially in the face of likely defeat.[78] In Operation IRAQI FREEDOM, the posture had become more active in nature, but the basic mission remained the same: protect the force through effective detection and decontamination capability. Again, while MOPP analysis is critical to protecting the force in certain threat environments, it is not such an all-encompassing job that the chemical officer could not oversee this task along with the duties that could be added with the chemical officer as the assigned and trained division protection chief.

2.3 ASSESSMENT

A major problem with CBRN activities under modularity stems from a perceived lack of relevance. This is nothing new for the chemical corps, which has been on the brink of obsoleteness in the past. The simple truth is that there is an attitude in the army toward low-density specialties that "You're not that important and we don't want to hear from you… until we need you." Overcoming such a cultural stigma would be difficult to overcome, but the protection cell creates a method of compartmentalizing these specialties so that they have a voice and purpose at relevant times, while enabling the chief of staff

[76] U.S. Army, *FM 3-37*, pp 2-16 – 2-17.

[77] Albert Mauroni, *Chemical-Biological Defense*, p. 7.

[78] Swain, *"Lucky War" Third Army in DESERT STORM*, p. p. 71.

to streamline effort among the staff. This can only be achieved through full understanding of the benefits of the matrix style organization that the modular division works under. The major question for the chemical corps and protection in general is: Whether or not the structure of the warfighting function and cell are correct, how do we properly develop someone with the skills and understanding of such a myriad of tasks as are encompassed by this cell? The answer to this question is a matter of some debate, but some answers can be found in the preceding discussion.

The concept of dual-hatting the division chemical officer the protection cell chief might make some people nervous, both within the chemical corps and outside it. Chemical officers may argue that their job is far too important and technical to be burdened with the general requirements that they will need to learn to manage the other facets of protection. In addition, engineers and other members of the protection cell may feel that they should have the opportunity to be the protection chief because of their superior grasp of maneuver operations, or some other subjective measure. Neither argument holds much water under analysis.

The division chemical officer, in reality, takes on many additional duties well outside their realm of expertise because of the unlikelihood and lack of time and resources to constantly train within their expertise, leaving them in a constant battle for relevance. While other members of the protection cell, at times, may be underutilized due to various operational variables, one would be hard-pressed to find a division that has not needed some assistance from their engineer, provost marshal, or any other member of the protection cell. Making the division chemical officer the division protection officer will not only solve the problem of who should be designated in charge of protection, but will also bring relevance and increased professional development to the chemical corps. In fact, it is not too far a stretch to suggest that, eventually, the chemical corps could be redesignated as the protection corps, with chemical-biological-radiological-nuclear protection as one of their sub-tasks.

3. OPERATIONAL AREA SECURITY

November 1967, Quang Tri Province in northwestern Vietnam. The newly arrived Division Commander, wanting to gain situational awareness in his area of operations, visits one of the nearby American advisory posts. He is discouraged to find the senior military advisor disheveled and seemingly befuddled by his mission. The adviser is unable to accurately report to the general what areas his South Vietnamese Army counterparts control, and what areas the North Vietnamese and Vietcong are contesting. He does not even believe that the South Vietnamese fully control the town that houses his advisory district headquarters.

Taken aback by the advisor's negativity, he explains how his own division has the enemy on their heels in the villages and mountains, having killed more than 500 of them in the last month alone.

"General," the advisor replies with a distant stare, "That's your war, not mine."

Defeated in his desire to sway the advisor to his way of thinking, the general returns to his base. Later that night, a Vietcong team attacks the advisory headquarters with explosives, killing the senior advisor and several other Americans and South Vietnamese soldiers.[79]

Area security is one of the most basic and critical missions in any combat operation, and certainly one of the most important within the realm of protection. Failure to properly secure an area of operations can result in catastrophic consequences, as clearly portrayed in the description above. And unlike most other areas under the warfighting function, area security is not something that can effectively be planned and supervised by a single specialty cell – like survivability and CBRN, for example – but rather it is the result of the combined efforts of several specialists and planners. This characteristic highlights the

[79] F.P. West, Jr., "Area Security," p. 2. F.P. "Bing" West recalled this incident in a research paper he wrote while working for the Rand Corporation. Recounting his three years of combat experience at the tactical level in Vietnam, and reflecting on President Nixon's withdrawal plan, West predicted that the South Vietnamese would fail if they were unable to implement effective area security tactics, particularly outside of large cities and villages. His prediction, of course, outlined one of the eventual failings of the government of Vietnam that led to its collapse.

synthetic and integrative nature of the division protection cell, as well as the challenges of coordinating distinct efforts toward a unified objective.

Though its exact definition and execution have changed over time, the basic concepts of area security have played major roles, both doctrinally and operationally, in the evolution of army operations over the last forty years. The current Army definition of area security – and the one to be used for analysis of operational effect – is "a form of active security operations conducted to protect friendly forces, installations, routes, and actions within an area of operations."[80] Army operations have always maintained some type of focus on the protection of these assets, but their doctrinal and operational methods have adapted over time due to organizational and environmental differences. With regard to area security, effective organization and use of the division protection cell creates increased efficiency in the flow of information, training and planning integration, and unity of collective efforts across not only the efforts within the protection cell, but across the other warfighting functional cells as well.

3.1 STAFF ORGANIZATION AND FUNCTIONS

3.1.1 *Background and Historical Development*

Area security is nothing new to Army operational doctrine. Two of the six key missions of the U.S. Army in Vietnam were to secure lines of communication and to secure key installations, reflecting two of the essential area security missions now covered under *FM 3-37*.[81] Still, there has been an evolution of the doctrinal concept itself, and how it is carried out operationally at the division level. The biggest doctrinal change has been the development deals with the concept of the "rear area." Since

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[80] U.S. Army, *FM 3-37*, p. 2-7 and *FM 3-90*. This definition has not changed over the last ten years, but its translation into actual Army operations has evolved. This definition should not be confused with the *ADP 3-0* concept of wide area security, as part of the Army's current operating concept. Whereas wide area security is concerned with applying "the elements of combat power in unified action to protect populations, forces, infrastructure, and activities; to deny the enemy positions of advantage; and to consolidate gains in order to retain the initiative," area security a subset of this wider concept, strictly concerned with protecting friendly forces, bases, routes and friendly actions within the AO.

[81] Shelby Stanton and William Westmoreland, *Vietnam Order of Battle*, p. 8. These two missions, listed last among the six key tasks as outlined by the commanding general, show both the significance of area security, as well as its place in the order of merit among combat tasks.

Vietnam, there have been few Army operations that resulted in decisive battle on a traditional battlefield. This shift toward protracted warfare, asymmetric tactics, and noncontiguous areas of operation have led to a redefinition of rear areas, as well as a new way of protecting those areas. In response to this, as well as the reorganization of the division staff, the operational approach to area security has also changed.

In 1970, the Army published *FM 31-85, Rear Area Protection Operations*, which outlined eight key principles of rear area security: austerity, command, economy of force, integrated protection, offensive, responsiveness, supervision, and priority of risks.[82] These principles reflected lessons learned from Vietnam, clarifying the 1968 version of *FM 100-5*, which defined rear area security as "those measures taken before, during, and after an enemy airborne or airmobile attack, sabotage action, infiltration, guerrilla action, to reduce their effects."[83] Operationally, this meant the general approach to Vietnam, which was described as "area warfare," had to encompass lines of communication and rear area security operations.[84] On some level, division commanders recognized that they could not control entire areas under North Vietnamese and Vietcong influence, but also saw the need to protect their headquarters and supply lines as best they could. Ironically, it was these rear area security operations, and not the offensive "search and destroy" and "clear and secure" missions, that resulted in some of the largest numbers of enemy casualties in the war.[85]

By the 1980s, the concept of rear area security turned its focus toward more conventional operations in response to the Soviet deep battle threat.[86] Due to the threat to rear areas that the Soviet

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[82] U.S. Army, *FM 31-81, Rear Area Protection*, pp 3-1 – 3-2.

[83] U.S. Army, *FM 100-5* (1968), p 6-21.

[84] Simon Dunstan, *Vietnam Tracks: Armor in Battle, 1945-1975*, p. 71.

[85] Dunstan, p. 92.

[86] Richard W. Harrison, *The Architect of Soviet Victory in World War II*. Deep Battle, first developed in the interwar period by G.S. Isserson, consisted of three parts: "the meeting battle, the breakthrough battle, and the defensive battle." The concept, an attempt to overcome the stalemates of World War I trench warfare, was used to some great success in penetrating German defenses and attacking their rear areas in World War II, due in no small part to the Soviets' overwhelming number of

tactics presented, an increased focus on rear area operations evolved, including a new manual titled *FM 90-14, Rear Battle*. This document outlined the requirements for assessing risk to rear area protection with the reward of offensive operations, and specifically outlined the duties of special staff planners. Most significantly, *FM 90-14* identified three main threat levels for rear operations – ranging from small terrorist-type diversionary attacks to full-scale conventional attacks in the rear – but neglected to identify or allocate resources to counter each of these threats, particularly the threat of terrorist or subversive attacks by individuals or small groups.[87] As was often the case for the Airland Battle Division, focus was more on the larger, conventional threat than the smaller, more asymmetric ones. That focus would change somewhat in the 21st century.

In today's doctrine, several of the lessons learned with regard to rear area security from Vietnam, the Airland Battle era, and more recent operations have been addressed doctrinally at the division level and above. Recognizing the plausibility and magnitude of both conventional and nonconventional threats, *FM 3-37* identifies and clearly delineates responsibility for the numerous threats that could harm the division headquarters, as well as other "rear" areas. This is evidenced through the protection focus areas of antiterrorism, information protection, and of course, operational area security. Perhaps more significantly, current doctrine recognizes the fact that, on today's battlefields – in particular in Iraq and Afghanistan – there are truly no "rear areas," and therefore the term has all but vanished from the Army's doctrinal and operational vernacular.[88] Since there are no more rear areas, it is all the more critical for the division staff to take measures to identify threats throughout the area of operations and to coordinate for

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troops and tanks. During the Cold War, this type of warfare presented a significant threat to NATO forces in Europe, resulting in the change in American doctrine in the 1980s.

[87] Glenn M. Harned, "Offensive Rear Battle," in *Military Review*, Feb. 1986, p. 30. The author notes that the duties of the G2 (Division Intelligence Section) are significantly lacking with regard to rear area protection, and that the scope of the MP role far exceeds their capabilities. Harned recommends a greater role for Special Forces to be involved in rear area security operations.

[88] U.S. Army, *Change 1 to FM 3-0, Operations*, released in 2011, rescinded the term "rear area" from Army doctrine, in recognition that nearly all operations, including command and control and sustainment, occur under the threat of attack.

the protection of key assets against those threats. This fact, perhaps more than any other, justifies the existence of the division protection cell. Still, the questions remain – as it did in the Airland Battle division – as to whether or not the division has the capability to truly protect against these identified threats, and whether they are best organized trained to counter them.

3.1.2 *Staff Organization and Flow of Information*

The three key issues that bear on the problem of staff organization with regard to division-level area security are: (1) the dissolution of the division rear command post, (2) the resultant lack of overarching command and control of area security operations, and (3) the capability of the division protection cell to provide sufficient protection of key assets within its area of operations. Because these three issues are insufficiently addressed under the current organization, the division protection cell is not as operationally effective as it could be with some minor structural revisions.

Although the Army has done away with the concept of "rear area" and has operationally dropped the division rear command post from its ranks, this does not mean that the key concepts and functions of that organization went away. In fact, they are readily apparent and in many cases more robust in the organization and functions provided by the protection cell. The 1986 doctrine improved vastly on the state of readiness in the rear areas, providing for the protection of sustainment assets who were supporting the main offensive fight. At least in theory, a capable force, internal to the division, was assigned to counter each of the three threat levels. The problem was, in practice, there either was no rear area, or the division-internal assets were vastly underequipped to counter them.[89] Enter the modular division.

Recognizing the need to push capability down to the brigade combat team level, divisions gave up much of their operational capability but retained planning capability. This set-up worked well in the decentralized environments of Iraq and Afghanistan, but its effectiveness remains to be seen in the event that divisions are called upon to fight as divisions. In such a case, the division headquarters might very

[89] Harned, p. 32.

well need to centrally control and coordinate cross-functional efforts in the name of operational area security, taking back some of the capabilities that had been pushed to the brigade combat teams. While it may not be operating with a rear area in the historical sense, the division staff would need to coordinate for area security using many of the same principles and doctrine that the 1980s era division rear command post used. The only missing factor is the command emphasis that the rear command post maintained.

In most cases, the division rear command post under Airland Battle doctrine had as its chief supervisor one of the assistant division commanders.[90] This structure not only added centralized control of rear area operations, but also aided the division commander by enabling him to focus on the close and deep fights in his area of operations. Under the current division protection cell, nearly all the same efforts are combined under one warfighting functional cell, but there is no overseeing commander charged with command and control over protection operations. This is a major weakness to the current structure, especially in the case of a division fighting in a more conventional operating environment. Because of this, protection doctrine writers should review its doctrine and determine the feasibility of either assigning either one of the assistant division commanders to oversee the protection cell, or giving the protection cell lead command authority over division operational area security. While this addresses the issue of command and control over area security, the question remains as to the capability of the division to fulfill area security and protection needs. Such issues are best covered within the realm of training.

3.1.3 *Training and Planning Integration*

While the doctrine clearly addresses the threats and required countermeasures for proper area security, operational experience has proven that divisions have often been less than fully capable of accomplishing the protection tasks set out for them. In both Vietnam and DESERT STORM, several cases have been cited wherein rear area security operations were shunned in favor of more offensively-

[90] U.S. Army, *FM 90-14*. Although the doctrine does not specifically state that the division rear command post should be overseen by a general officer, it does dictate that a single commander should oversee all rear area security operations. The typical practice of using an assistant division commander as the rear commander was verified both by MAJ Harned in his article, as well as LTG(Ret.) Mallory.

oriented tasks and missions. In today's environment, more of an emphasis has been placed on protective measures and missions, even going so far as to designate entire units toward these measures, such as route clearance engineer companies devoted entirely to counter-IED missions. Still, most of this training and execution of missions takes place at the tactical level. The current division staff structure, and particularly the division protection cell, should make it simpler to consolidate planning and execution efforts at the operational level, but deficits in training, manning, and planning integration hinder its effectiveness.

In the past, among the prioritization of tasks and training objectives for units to achieve in a given training or pre-deployment cycle, area security was never very high and often did not make the cut at all in training meetings. There were simply too many other key tasks to accomplish, and not enough training time or assets to meet them all. The draftee Army of the Vietnam era had to prioritize training of soldiers based on time constraints of enlistment periods, as well as an ineffective rotational policy. Because of this, most soldiers were taught to fire their weapons and to operate in small units, but collective training above the squad level – and certainly at the division level – rarely made it out of the planning stages, and only occurred in actual combat.[91] Missions such as base defense and route security were new to units and individual replacement soldiers entering into the theater, and an understandable amount of confusion and adaptation mired them below the division level. This lack of collective training and planning integration enabled some of the moderate successes achieved by the North Vietnamese during the Tet Offensive, including the breach of the newly constructed US Embassy in Saigon.[92]

A move away from the rotational model of Vietnam in the 1980s eased some of the constraints that had stymied efforts in the past, with new doctrine directing divisions on the importance of collective training under the AirLand Battle concept. As the 1986 version of *FM 100-5* stated, "Such collective training is far more effective and realistic than the training of units in isolation from their routine

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[91] Mark DePue, "Vietnam War: The Individual Rotation Policy," p. 7.

[92] James H. Willbanks *The Tet Offensive: A Concise History*, p. 34.

attachments and support."[93] Still, the focus of training remained on the more offensive tasks, such as combined arms breaching, and area security was often assumed or given minimal priority in training. In terms of operational area security, or rear security, MP soldiers in the division had the main onus of responsibility. However, while MPs were well practiced in area security tasks, they seldom integrated with other units, particularly combat support and service support units. "Not only did [these types of] units not understand how to call the military police for assistance if their base was attacked, but most units did not have the organic communications equipment necessary even to make such a call."[94] Such training and equipping issues would have to be overcome during DESERT STORM, but the short duration and overwhelming outcome of that war prevented them from becoming points of overall failure. It did not, however, prevent lessons from being learned.

The longevity of operations in Iraq and Afghanistan, for all its countless costs, has at least provided US Army divisions with the ability to properly train and equip their soldiers for the myriad of tasks they must accomplish. After more than a decade of fighting, tactical units – from squad to brigade level – are able to handle the majority of tasks before them, including several that fall within the realm of area security. Route security, base defense, and response force operations – all tasks that would have been a low priority for training twenty years ago – are now nearly second nature to most conventional units. In fact, some have argued that the military has become so protection-focused that it would be difficult to fight a high intensity conflict, or even to accomplish its current counterinsurgency mission.[95] To be sure, today as in the past, with the numerous pre-deployment training requirements placed on units, it would be impossible to accomplish all of them and be prepared for all contingencies that could arise in theater, and the military should not lose its offensive mindset. But that mindset must be balanced with the protection of personnel and critical assets, and that means training must continue to include area security

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[93] U.S. Army, *FM 100-5*, pp. 6-7.

[94] Mary Maier, "Military Police Operations: DESERT SHIELD/DESERT STORM: A Personal Experience," p. 17.

[95] Gibson, p. 23.

tasks at all levels. In the current operating environment, much of the execution of area security operations takes place at the brigade level, so it makes sense to leave most of the tactical assets for area security – including MPs, CBRN, fires, and others – assigned at the brigade-level and below. A planning capability, however, must be maintained at the division level for operational oversight and coordination across units and areas of operation. In this sense, the protection cell is of far greater utility at the operational level than at the tactical; planning, tracking, and coordinating for protection must be integrated into any operational concept, but must be executed through integration at the tactical level.

3.2 PROTECTION ASPECTS OF OPERATIONAL AREA SECURITY

Because area security currently covers twelve assets and activities, a full discussion of all of them would go far beyond the scope of this paper.[96] For the purposes of analysis of the protection cell's operational effect, however, the most constructive and integrative focus areas are base and base cluster defense and physical security. These areas clearly represent the breadth of efforts and possible impediments to unity of those efforts, which belie the need for an effective division protection cell.

3.2.1 *Base and Base Cluster Defense*

Base defense, like nearly all key tasks and missions in military operations, is not solely the job of the protection cell to plan and orchestrate. It consists of "the local military measures, both normal and emergency, required to nullify or reduce the effectiveness of enemy attacks on, or sabotage of, a base to ensure that the maximum capacity of its facilities is available to U.S. forces."[97] A look back at the changes in perspective on the defense of bases and base clusters (a group of bases whose protection is provided by some higher headquarters) portrays the frustrating but apparent practice of the US military to

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[96] U.S. Army, *FM 3-37*, pp. 2-8 – 2-9. The twelve focus areas under area security protection are (1) base and base cluster defense, (2) critical asset security, (3) command and control node protection, (4) high-risk personnel security, (5) physical security, (6) response force operations, (7) lines of communication security, (8) checkpoints and combat outposts, (9) convoy security, (10) port area security, (11) surveillance, and (12) area damage control.

[97] U.S. Army, *FM 3-37*, p. 2-8, in accordance with the joint definition in *JP 1-02: Operational Terms and Graphics*.

over-adjust its focus in response to a change in operating concept or perceived threats, similar to Dietrich Dörner's "garland principle.[98] Like an impatient person in a shower adjusting the water temperature without allowing for a time lag, the US military has a tendency to become either too offensively or too defensively minded, rarely achieving a balance between the two.

Interestingly, in spite of the many issues with the Army in Vietnam, the balance between offensive and defensive operations, as shown through their base defense operations, was quite adequate for that environment. Understanding the need for multiple firebases in the vicinity of larger bases and among the populace, divisions made great use of their internal engineers, as well as the theater engineer assets to construct protective bases with integrated bunkers and firing positions for their smaller units. More operationally significant, defense of the bases were intentionally planned and managed at the division level and higher, ensuring proper integration and balance among air defense, MP, and other protective measures. Within 30 days, units were able to occupy, defend, and maintain firebases in austere locations while conducting offensive and stability operations in the area.[99] Such integrated and defensive measures enabled US Army forces to successfully repel the attacks of the Tet Offensive in Saigon, as well as in the outer cities and villages.[100] In an area with few of the assets available in today's theaters, divisions were able to shape the terrain into effective operating bases with little outside support.

After Vietnam, with the focus moving more toward war with the Soviets in Europe and a disdain for anything that had to do with Southeast Asia, as well as the influence of negative public opinion against the US military, the operating concept moved toward an active defense. Illustrated by the 1982 version of *FM 101-5*, the concept was a reflection of the attitude throughout NATO countries that, due to economic and military constraints, defending Europe was the best they could do against the Soviet

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[98] Dietrich Dörner, *The Logic of Failure*, pp 132-3.

[99] Traas, p. 556.

[100] Gibson, p. 42.

threat.[101] The concept was reflected in practice through the exaggerated emphasis on defending the Fulda Gap short of Frankfurt, Germany, and the various base clusters in the vicinity. While the 1986 version of *FM 100-5* improved upon the Army's operating concept, making it more offensively oriented, it was the end of the Cold War and the outcome of DESERT STORM that enabled Army leaders to focus almost entirely on the offense. The idea of a quick, decisive war exacerbated and oversimplified the issues that would face the US military in the new millennium.

In the opening months of Operation Iraqi Freedom, the offensive mindset served the military well, with a quick and relatively successful seizure of terrain and defeat of the enemy throughout Iraq. The problem that then faced divisions: what to do with all this newly acquired terrain? Falling in on former Iraqi regime palaces and bases, facilities were quickly determined to be ill equipped and damaged by the air attacks. So that military forces could focus on stabilizing the population, contractors were brought in to the country in order to improve facilities, leading to the creation of FOBs and "Super-FOBs." A dependence on these large bases led to a greater separation of soldiers from the population they were supposed to be securing, and a rise in violence resulted from these conditions. Only by means of the Iraq "Surge," and the movement of tactical units out of Super-FOBs and into joint security stations and combat outposts were coalition forces able to properly partner with and empower their Iraqi counterparts to secure their own populations.[102] The Army had moved back to its effective practice of expedient, efficient, but less comfortable bases among the population. Such solutions are not easy, however. The cautionary tale presented by the attack on Wanat in Afghanistan proves the dangers of improper base defense planning and support.[103]

Effective base defense is essential to the success of any operation. As a key task for the division protection cell, efforts toward base defense must be integrated and robustly planned and supported for any

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[101] Richard M. Swain, "Filling the Void: The Operational Art and the U.S. Army," p. 156.

[102] John Nagl, in Dylan Matthews' "How Important Was the Surge?" http://prospect.org/article/how-important-was-surge, accessed 7 February 2012.

[103] Kilcullin, David (2009). *The Accidental Guerilla*. New York: Oxford University Press, 2009.

deploying operation. The US military cannot assume that, in its next conflict, it will fall in on readily available bases or that it will receive the kind of long term contractor support that it has in the past. On the contrary, the military must plan to fight more like it did in Vietnam and during the Iraq War Surge: with small, flexible, austere, but effective bases for staging operations and refitting. If a properly manned division protection cell can combine modern technology for mission command and base defense with these practices, the result will be a better-protected and more effective force.

3.2.2 *Physical Security*

An important aspect relating closely to base defense is physical security. According to *FM 3-37*, physical security encompasses "that part of security concerned with physical measures designed to safeguard personnel; to prevent unauthorized access to equipment, installations, material, and documents; and to safeguard them against espionage, sabotage, damage, and theft."[104] While a large part of physical security initially fell under the purview of the division provost marshal and his military police units, physical security has become a far more all-encompassing and complex task requiring interdependent planning efforts across staff sections. At the heart of physical security efforts is the assessment of friendly vulnerabilities, and corresponding countermeasures to protect those vulnerabilities. Perhaps the most basic of all the functions managed by the protection cell, physical security and vulnerability assessments are also among the most potentially catastrophic if improperly planned or executed.

The rise of the role of physical security in US military operations sprang from a response to the rise of terrorist acts in the 1960s and early 1970s. In addition to the largely unsuccessful terrorist attacks surrounding the Vietnam War, several other attacks around the world resulted in more lucrative efforts against the United States, including kidnappings and murders of senior level American diplomats in Guatemala, Sudan, and Brazil. These events led to a Congressional mandate to both the Departments of

[104] U.S. Army, *FM 3-37*, p. 2-8.

State and Defense to improve the physical security of all overseas interests and bases.[105] What this meant at the division level was a doctrinal shift in the emphasis on the protection of friendly assets – both at home an abroad. The 1979 version of *FM 19-30 Physical Security*, wrought many changes to the Army's approach to security. Perhaps the most significant change was the first chapter, which presents physical security through a systems approach, taking into account the mission, design, threat and assessment. Turning the Vietnam era paradigm of physical security as a solely MP function on its head, the new doctrine showed security as a concerted effort of interdependent staff members, including engineers, CBRN, intelligence, and maneuver and sustainment planners, in addition to MPs.[106] The doctrine was somewhat ahead of its time in theory; in practice however, physical security would continue to take a backseat to offensive operations in terms of personnel and training support.

The Airland Battle Division achieved some success with regard to physical security during Operation DESERT STORM, but continued terrorist attacks in smaller theaters proved the continued vulnerability of military bases abroad. Any time a large unit deploys to a new area for combat, they are most vulnerable at the port of debarkation. This was certainly true for American units arriving in the Middle East in late 1990 and early 1991. Maneuver, intelligence, and CBRN planners from the 1st Infantry Division paid special attention to the security and force protection plan for soldiers and equipment moving into theater, but there were still key vulnerabilities in staging areas. "The thousands of soldiers living in the crowded camps made a lucrative target for terrorist bombs, commando attacks, or missile-delivered chemical attacks."[107] The minimal number of successful attacks against coalition forces should not be mistaken for success, however. Evidence suggests that planners relied more on luck than actual capability. Lack of combined arms training on security tasks, lack of communications synchronicity and capability, and the sheer number of troops in such a small area made proper security

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[105] "The Great Transformation: Terrorism and Diplomatic Security, 1967-1978," in *History of the Bureau of Diplomatic Security of the United States Department of State*, p. 197.

[106] U.S. Army, *FM 19-30, Physical Security*, pp 1-4.

[107] Bourque, p. 61.

measures untenable.[108] Khobar Towers, a soldier housing unit used during DESERT STORM, became the site of one of the most infamous terrorist attacks just five years later, again exposing key vulnerabilities in physical security.[109]

In the modular division, physical security has become even more interdependent and resourced, in large part due to the aforementioned locating of soldiers on small bases among the population in Iraq and Afghanistan. Doctrinal changes in physical security actually began before the September 11 attacks, with an update to the Physical Security field manual in January 2001. This document, responding to terrorist attacks in Saudi Arabia, Kenya, Tanzania, and in the Gulf of Aden, among other threats, takes a design approach to physical security, relying more on technical expertise of engineers in security design in coordination with security planners.[110] In addition, a new appendix specifically addressing the technical and tactical considerations of vulnerability assessments is included, prescribing efforts for each staff section and member of the assessment team.[111] One issue with implementing these changes for the modular divisions was the disparate organization of MPs in accordance within the warfighting functions, with physical security falling under the protection cell and detainee operations under movement and maneuver. According to the subject matter experts at MCTP, detainee operations will move under the purview of the protection cell, which should help streamline the division provost marshal's operations, as

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[108] Maier, p. 17, 22.

[109] Rebecca Grant, "Death in the Desert," in *Air Force Magazine*, p. 148. Grant recounts the major terrorist attacks against Americans since the 1996 attack on Khobar Towers, including the "subsequent terror strikes against the US embassies in Kenya and Tanzania, the US Navy destroyer *Cole* in Aden harbor, and the Pentagon and the World Trade Center towers in the United States."

[110] U.S. Army, *FM 3-19.30 Physical Security*, p. 3-1. This discussion should not be confused with the Army Design Methodology. While there certainly are parallels, security design is more concerned with the architectural design and layout of security measures in a holistic and interdependent manner.

[111] U.S. Army, *FM 3-19.30*, p. K-3. The key members of the assessment team include the assessment team chief, physical security specialist, structural engineer, infrastructure engineer, operations readiness specialist, and intelligence/counterintelligence specialist.

the senior MP on the division staff.[112] Still, there is a training shortfall in the operational effect of the protection cell with regard to physical security. A recent division staff rehearsal at 1st Infantry Division revealed that no one in the protection cell or engineer cell had trained on how to conduct vulnerability assessments. Even if they had, the last chance to receive such training would have been at the engineer captains' career course. The creation of a protection center of excellence with oversight for key training such as this would help to alleviate such problems, and make the protection far more effective with regard to physical security.

While Army divisions have certainly improved in the integration of security measures and barriers in the protection of friendly forces, new threats await that will create new vulnerabilities. Foremost among these is the threat of cyber attacks.[113] This new threat will create new areas of exposure for Army divisions, and will require a greater integration of capabilities from the mission command and intelligence cells. Interdependence and integrated efforts are the future of division level staff planning; the sooner the staffs embrace this idea and work to train and implement practices that support those efforts, the more effective their planning will be.

3.3 ASSESSMENT

In response to the evolving threats of the last forty years, the concept of protection has become more and more important to planning operations. The current operating environment has rid doctrine and practice of the concept of rear areas, but that does not mean that there are no lessons to learn from former protective practices, including the possibility of either assigning either one of the assistant division

[112] When a tension between doctrine and practice occurs, staffs take one of two approaches: (1) they fall back on old, comfortable, often less efficient practices, or (2) they experiment and find best practices to pass on to doctrine writers. This could be more of the latter, with doctrine catching up with field practices, as many units have organized their provost marshal section this way for improved unity of effort.

[113] Clay Wilson, "Computer Attack and Cyberterrorism: Vulnerabilities and Policy Issues for Congress," p. 1.

commanders to oversee the protection cell, or giving the protection cell chief command authority over division operational area security.

Of greater importance to the operational effectiveness of the protection cell is maintenance and improvement of the planning capability of the division's protection specialists. With an unpredictable future and an all-encompassing operating concept, today's Army divisions be prepared to fight flexibly interdependently across specialties, and to prepare for future threats such as cyber warfare. In order to accomplish this level of effectiveness however, will require improved training and education. The Maneuver Support Center of Excellence should either stand up an organization to serve as the Protection Center of Excellence, or transform to encompass all of the specialty areas covered by the protection warfighting function. Only such an organization would have the capability to train and educate future protection leaders on the breadth of issues they will need to master in future operations. Until such a change occurs, the division protection cell will continue to fall short of its full operational potential.

CONCLUSION

Summer, 2022. In a suburb outside what used to be a major foreign trade hub before the war, an Army division marks its one-hundredth day in its area of operations. Having completed major combat operations whereby the rogue government's military forces were defeated, the division has begun to establish combat outposts and joint security stations to help stabilize the area and eventually transition control back to the newly established legitimate government. The division protection cell chief, a chemical officer by trade, collapses into his desk chair, exhausted. It's been a long day, and a long deployment. He just finished briefing the assistant division commander for support on improvements to the area security plan, with back up from the division engineer for technical expertise. During the briefing, reports came into the operations center that one of the combat outposts had endured a mortar attack. Proper security and integrated survivability measures saved the lives of those soldiers on guard and in the chow hall, and the fires cell coordinated for counter-battery on the insurgents. The MP quick reaction force was on call to investigate the point of origin after the counter-batter was complete. At the conclusion of the briefing, the protection chief informed the general that the last of the known weapons of mass destruction had been secured, and were being prepared for dismantling. It had been another successful day for the division protection cell, but thanks to his training and education on protection efforts at the captains' career course, intermediate level education, as well as online training, he would sleep well tonight.

The operational effect of the division protection cell has not yet reached its full potential. One of the biggest impacts that the current organization has been the breakdown of several stove pipes across staff sections, and the forced integration of training and planning efforts across disparate functional areas. Survivability, CBRN efforts, and area security are more effectively managed and integrated into operations than at any previous conflicts. The major issues hindering the effectiveness of the division protection cell lie in the areas of organizational layout and professional development and education of

those individuals charged with managing the myriad tasks under the purview of the protection cell. These issues can be addressed through the implementation or consideration of a few recommendations.

Embrace interdependence. No effective or successful operation is planned in a vacuum. Successful plans come from the coordination and integration of experts with various perspectives on a mission or task. Learning organizations embrace constructive conflict and discourse in the interest of an integrated and interdependent solution. The protection cell only works if commanders and chiefs of staff understand this kind of interdependence and resource it accordingly.

There are no more rear areas. This comment is obvious to anyone who has been in the Army in the last eleven years, but its implications are deeper than most give credence to. Just because there are no more rear areas does not mean that there are no lessons to be learned from that practice. On the contrary, the lack of rear areas demanded that the organization that became the protection cell take over the duties formerly covered by the division rear area staff. The command oversight and doctrinal practices of the division rear area should inform some of the decisions and organization of the division protection cell.

The Army needs a Protection Center of Excellence. Protection is the only warfighting function without a center of excellence that champions its role and changes. The lackluster support and publication of protection concepts from the Maneuver Support Center at Fort Leonard Wood, as the Army's protection proponent, has had severe operational impacts in the field. The Maneuver Support Center must either transform to the Protection Center or create a robust capability within its organization to fully address the problems of training and educating officers and soldiers on protection tasks. As long as personnel are forced to learn how to conduct protection operations on the job, their potential effectiveness will be strictly impaired.

The Chemical School should take over protection-specific training and education. In addition to the creation of a Protection Center of Excellence, one branch should take the helm of protection training. The Chemical Corps is uniquely postured to take on this role, as their section often runs the daily operations of the division protection cell in current operations. While their tasks of protective posture and WMD control are essential, the likelihood of those tasks being required in the current operating

environment is far less than many other threats covered under protection. By focusing on the management and planning of other protection officers, chemical officers can be more impactful in the daily operations of the division, and will improve the overall effectiveness of the division staff.

Continue to learn, evolve, and share. The division protection cell has evolved since its inception, and, like anything in the Army, it improves because of the capturing and sharing of best practices and lessons learned. This may mean the realignment of certain tasks under other warfighting functions, or even the creation of a new warfighting function if the need arises.[114] Only be learning and sharing information can organizations like the protection cell become more effective.

The division protection cell is a growing organization in today's Army. There is little doubt that it enables better unity of effort, flow of information, and planning integration in operations. If Army leaders can increase the institutional body of knowledge and education for protection officers, the division protection cell can become a more relevant and integral part of Army operations.

[114] Erik Walker, "Achieving Operational Adaptability: Capacity Building Needs to Become a Warfighting Function," p. 1. The author presents the argument that capacity building – a key part of many national security goals – should become a warfighting function to gain better emphasis in operations. Others have suggested a new branch or warfighting function to specifically address the cyber threat.

APPENDIX: GLOSSARY OF TERMS

Air and Missile Defense: Elements that protect installations and personnel from over-the-horizon strikes by conventional and weapons of mass destruction warheads according to mission, enemy, troops and time available, terrain, and civil considerations. *FM 3-37*, p. 2-1.

Airland Battle: The conceptual framework, structure, and operating concept that formed the basis of the US Army's warfighting doctrine in the late years of the Cold War from 1982 into the late 1990s. Airland Battle relied on close coordination between land forces acting as an aggressive but mobile defense, and air forces conducting deep attacks against the enemy rear. *FM 101-5*, 1982 and 1986.

Antiterrorism: The Army's defensive program to protect against terrorism. Army antiterrorism focuses on risk management, planning (including the AT plan), training, exercises, resource generation, comprehensive program review, and the conduct of random AT measures. *FM 3-37*, p. 2-9.

Chemical, Biological, Radiological and Nuclear Operations (CBRN): The employment of tactical capabilities that counter the entire range of CBRN threats and hazards through weapons of mass destruction (WMD) proliferation prevention, WMD counterforce, CBRN defense, and CBRN consequence management activities in support of operational and strategic objectives to combat WMD and operate safely in CBRN environments. *FM 3-37*, p. 2-15.

Doctrine: Approved rules, tenets, and practices distributed by the leadership an armed force as guidelines for tactics and organization. Walter Kretchik, *U.S. Army Doctrine: From the Revolutionary War to the War on Terror*, p. 5.

Explosive Ordnance Disposal (EOD): The elimination or reduction of the effects of explosive ordnance (EO) hazards to protect combat power. EO hazards are ever-present dangers on the modern battlefield. *FM 3-37*, p. 2-18.

Fratricide Avoidance: Preventive measures implemented to avoid the unintentional killing of friendly personnel by friendly firepower. *FM 3-37*, p. 2-6.

Force Health Protection: Measures taken by commanders, leaders, individual Soldiers, and the military health system to promote, improve, or conserve the behavioral and physical well being of soldiers. *FM 3-37*, p. 2-13.

Information Protection: Active or passive measures that protect and defend friendly information and information systems to ensure timely, accurate, and relevant friendly information. It denies enemies, adversaries, and others the opportunity to exploit friendly information and information systems for their own purposes. *FM 3-37*, p. 2-4.

Maneuver Support: Integration of key protection and mobility capabilities, tasks, and systems in order to assure freedom of action for the supported force. Maneuver Support Center of Excellence overview, http://www.dtic.mil/ndia/2008maneuver/JohnsonPanel.pdf, accessed 8 January 2012.

Mission Command: The conduct of military operations through decentralized execution based upon mission orders for effective mission accomplishment. Successful mission command results from subordinate leaders at all echelons exercising disciplined initiative within the commander's intent to accomplish missions. It requires an environment of trust and mutual understanding. *FM 6-0*, Glossary 10.

Modular Division: The result of the Army's transformation in the early 21st century. Modularity largely relies upon brigade-sized forces that are modular, allowing for a selective mix of units that meets the needs of combatant commanders at any time and place. *FMI 3-0.1 The Modular Force*, p. *vii*.

Operational Area Security: A form of security operations conducted to protect friendly forces, installations, routes, and actions within an AO. Forces engaged in area security operations focus on the force, installation, route, area, or asset to be protected. Although vital to the success of military operations, area security is normally an economy- of-force mission, often designed to ensure the continued conduct of sustainment operations and to support decisive and shaping operations. *FM 3-37*, p. 2-7.

Operational Art: The pursuit of strategic objectives, in whole or in part, through the arrangement of tactical actions in time, space, and purpose. *ADP 3-0*, p. 9.

Operational Planning: The art and science of understanding a situation, envisioning a desired future, and laying out effective ways of bringing about that future. Planning consists of two separate but closely related components: a conceptual component and a detailed component. Successful planning requires integrating both these components. *ADP 3-0*, p. 10.

Operations Security (OPSEC): The process of identifying essential elements of friendly information and subsequently analyzing friendly actions attendant to military operations and other activities to: a. identify those actions that can be observed by adversary intelligence systems; b. determine indicators hostile intelligence systems might obtain that could be interpreted or pieced together to derive critical information in time to be useful to adversaries; and c. select and execute measures that eliminate or reduce to an acceptable level the vulnerabilities of friendly actions to adversary exploitation. *FM 3-37*, p. 2-18.

ROAD Division: The Army's overarching divisional structure from 1962 to 1974, which emphasized the concept of interchanging battalion-size combat maneuver units within and between divisions in the interest of easy task organization. Essentially, the ROAD division was a return to the triangular struc- ture of World War II and the Korean War and was greatly influenced by the qualities of the armored division combat commands. Richard W. Kedzior, "Evolution and Endurance: The U.S. Army Division in the Twentieth Century," p. 29.

Safety: The integrating protective measures into the operations process through the protection warfighting function and the composite risk management process, which provides an opportunity to identify and assess hazards to the force and develop risk reduction measures. *FM 3-37*, p. 2-17.

Situational understanding: The product of applying analysis and judgment to relevant information to determine the relationship among the mission variables to facilitate decision-making. *FM 3-37*, p. 2-12.

Survivability: All aspects of protecting personnel, weapons, and supplies while simultaneously deceiving the enemy. Survivability tactics include building a good defense; employing frequent movement; using concealment, deception, and camouflage; and constructing fighting and protective positions for both individuals and equipment. *FM 3-37*, p. 2-12.

Warfighting Functions: The compartmentalized and mutually supportive functions that, when combined with leadership, make up the elements of combat power. The warfighting functions are command and control, movement and maneuver, intelligence, fires, sustainment, and protection. Combined Arms Doctrine Directorate, "Army Doctrine Update #1," 24 February 2007, p. 3.

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